ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

ENTERED IN THE SPRINGFIELD POSTOFFICE AS SECOND-CLASS MATTER.

VOL. IX SPRINGFIELD, ILL., March, 1906 No. 3

ORIGINAL ARTICLES

THE REQUIREMENTS OF SCIENTIFIC NURSING.*

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Mr. President, Members of the Graduating Class, Ladies and Gentlemen:

It is the custom, and a very befitting one, to recognize the accomplishments of educational achievements by an appropriate public service, known as a graduating exercise. The custom has grown out of the fact, no doubt, that civilized nations have seen fit to pay tribute, not only to genius, but to intellectual attainments that look forward to the betterment of the race, realizing that the progress and prosperity of mankind are largely due to the march of human intellect. All educational institutions, the public school, the college and the university have granted to their students, at the completion of the prescribed course, a testimonial, known as a literary degree or diploma, in evidence of the proficiency and work attained by the student. In the various departments of the great universities, the legal, the medical and the musical, like recognition is granted in these specific fields of education, and during the last few years such acknowledgement has been bestowed on the professionally trained nurse. It is at this time that the officers and staff of the Brokaw Hospital desire to express their confidence in the ability of the members of this class that have so faithfully and conscientiously performed the duties that have been assigned them during the two and one-half years of their hospital training. This is an occasion of rejoicing; this is an occasion of exultation; this is a time for congratulations, and yet it is an hour for serious reflection. The responsibilities of life are matters that are ever worthy of serious reflection, and more particularly are they serious when they involve, as they do in the case of nursing, questions not only of health and comfort, but also of life.

Every vocation of life worthy of the name is characterized by responsi-

* An address at the graduating exercises of the nurses of Brokaw Hospital, Feb. 5, 1906.

bility. We can not avoid responsibility. It confronts us at every turn, and the only reasonable solution is to meet it intelligently and courageously. The responsibility of the nurse is of great importance, and hence the necessity of a preparation that is thorough and adequate. Aside from natural gifts and particular aptitudes for this profession, the element of a common education at least demands broad-minded consideration. The ends to be attained by education are so manifold that it is quite impossible to believe that any successful professional career could be founded on anything short of a common English education. Education develops the latent powers of the mind; it strengthens the faculties, broadens the capabilities, deepens the judgment. Education gives to the mind breadth of scope and catholicity of content; education disciplines and trains the mind to greater possibilities and usefulness. An uneducated woman may become a good nurse, but never an intelligent one. She may perform her duties conscientiously, under competent supervision, but she must ever need direction. In an emergency or crisis she is quite at sea and is lacking in resources. Therefore, in the requirements of scientific nursing, the matter of a general education as a preliminary qualification is an important consideration. It is supposed that every woman that enters a training school for nurses should have these mental qualifications that are the result of common education in order that she may acquire the skill and proficiency in nursing that a thorough course in a hospital can afford. But there are other mental attributes that are also essential in the requirements of scientific nursing. She should have an aptitude for the calling. She should have a real love for the work or the arduous duties of her profession will become a burden. She should possess tact, executive ability and an unassumed dignity that will command the respect of her patients. She should be possessed of self-control, poise and equanimity that will merit the respect and confidence of her patients. She should have a cheerful disposition and a kindly manner that will inspire hope; she should possess integrity and sincerity of purpose that will win esteem. She should have a sunny, hopeful disposition, always happy and agreeable; sympathetic, yet philosophical; she should have a keen penetration, seeing beneath all pretense; she should be immensely practical and farsighted, having good judgment, strong purpose, and the ability to carry out definite plans with fidelity. It has been well said that "the true nurse is not a manufacture, but an independent, growing personality. Intelligent brain, kindly nature, sympathetic heart and skilled hand must be united. She is a living soul, as well as an active body, and the two must blend their forces to make her life a blessed harmony. The successful nurse is largely so by virtue of her own inherent fiber. Efficient work, however, in any line of learning or industry, requires more than simple intelligence and kindliness of nature. Skill, such as can come alone from a training adapted to meet the requirements of each particular trade or profession, is an absolute necessity. Nature and environment serve to develop in each man and each woman individual traits of character and habits which fit them especially for certain lines of work." Presuming that the nurse has the

requisite qualifications in a general education, and the necessary mental attributes of mind and heart, the next important qualification that we may consider in the requirements of scientific nursing is skill. This is attained only in a thorough course of training. It consists in a special education with this particular end in view; and here it would seem necessary to define the term education. Education is not simply the acquirement of knowledge. It does not consist in storing the mind with facts; neither is it comprehended in the term learning, for one may be learned and yet not educated. The terms are not synonymous; learning is not education. Learning is something we possess. Education is a cultured growth—a part of one's self, and if we keep these distinctions clearly in mind we can readily see how one may be very well learned—that is, informed—and not well educated, or that one may be educated without a vast amount of knowledge. "Education is the development of the faculties or germs of power in man, and the training of them into harmonious action in obedience to the laws of reason and morality." In the acquirements of skill in the professionally trained nurse, the stress of emphasis is to be placed on the word "trained," and from the first day that a pupil nurse enters a hospital or training school for nurses with the view of becoming a graduate nurse this important fact should be kept prominently in mind, and, indeed, such is the case, for she begins with the practical duties of her profession at once and takes up the theoretical and technical work as she progresses. It is here the word "trained" receives its full force and meaning. In this particular the training of nurses is unique; the training in the practical duties precedes the theoretical, which is the reverse order of the professional schools of the world, wherein a theoretical knowledge is attained during the course of study, and after graduation the practical features of the profession must be acquired. Theory and practice are inseparable in the preparation of trained nurses; theory has done more perhaps to elevate the standing of the profession than clinical experience alone could have done, but each is important and absolutely essential in the proper training for this profession. First of all, the nurse must be trained in the domestic duties of the hospital or training school in which she is educated. The presentative powers of the mind are called into use, and she should begin at once to school herself in habits of careful observation. She should learn to use her eyes and see at a glance the condition of things about her. She should familiarize herself with things which she is to use in her work and have them arranged in an orderly manner in her mind, but not alone should the utilities have an orderly arrangement, but there should be a place for everything, and everything should be in its place. She should never pass through a ward without training her eyes to observe the conditions of the patients, beds, tables, chairs and window sills; this may be done by a cursory glance, and if anything is out of order that can be arranged or righted in a moment she should not fail to attend to it. She should also note the temperature of the ward, the ventilation, and if the ward is properly lighted for the comfort of the patient or as the needs may require. Let these observations become a habit, the result of training; let the

nurse learn to be systematic and methodical in her work, and it will save not only unnecessary steps, but the appearance of the ward will always be presentable. If attention be given to the little details of the work, much valuable time will be saved. Whenever any article is used in the requirements of the ward, when it is no longer needed or in use, it should be put away in its proper place; otherwise the work is increased instead of lessened, and there must come a general tidying-up time with more or less confusion and disturbance to the patient. It is said that "order is Heaven's first law." Imagine the world without this faculty, everything out of harmony. The cosmos would become a chaos. There is nothing so subversive of good government or the control of one's surroundings as the lack of order; there is nothing so fatal to one's success many times as the confusion that comes from lack of order. It begets habits of carelessness and absent-mindedness. Everything should have a place, and everything should be put in its place.

"A lawyer in court had the habit of throwing his spectacles, after reading something, up on the top of his head. A brother lawyer, who was something of a wag, bought or borrowed a half-dozen pairs resembling the old lawyer's glasses, and when he threw his glasses up on his head, engaged, as he was, in making his speech and arguing his cause, the wag would slip another pair of glasses on the table before him, and when he wanted to use glasses he would pick up and put on that pair, and then tilt it up, until he got six pairs of glasses on his head, and, of course, all the people in the courtroom were convulsed with laughter; and, placing his hand up to his head, he found it covered with spectacles. It is said to have so disturbed his equilibrium, that he became confused and lost his case."

Another important virtue that must be learned in the domestic duties of the training school is patience. Patience is a virtue, and is of inestimable value in the profession of nursing. Indeed, no very marked degree of success can be attained without it. There are a great many trials that come up in the daily routine of a nurse's life that are very annoying and have to be met with fortitude and courage. It will not do to become impulsive or give way to the feelings under trying circumstances. Remember that calmness is the rarest quality in human life. If you permit the irritating outside influences to overcome you, you thereby acknowledge your inferiority by allowing them to dominate you.

Study each disturbing element impassionately and alone, bring all of the powers of your nature to bear on them, and one by one they will be dissipated like the morning mists that fade before the sun. Strength can only be attained by careful exercise and judicious training in these particulars. If you would learn to meet the great crises of life, you must learn serenity in your daily lives and be patient and self-reliant. Punctuality must receive its due recognition in the domestic duties of the training school as one of the essentials in the requirements of scientific nursing. The nurse must be trained to be punctual in the administration of her duties. Her obligations to the patient demand this of her and her fidelity to the attending physician's orders require it. If it be not a

characteristic trait of the nurse, it should be acquired by training. The thousand things of the hour claim her attention, and frequently her own pleasure and happiness must be sacrificed in order to meet its demands, but when the time arrives for the performance of some part of her duty it can not be postponed or delayed without possible injury to the patient. It would seem that nearly all of the nurse's duties are very exacting, and, indeed, they are, but the real dignity, character and honor lie in the fact that it is a daily self-sacrifice, not to the independence of health and strength, but to dependent suffering humanity. This condition calls out the noble and generous impulses of her heart and makes these cardinal virtues of her life shine forth with transcendent beauty. It robs labor of its weariness, makes work a pleasure, and toil becomes a blessing. The habit of punctuality naturally grows out of her responsibilities, and faithfulness to the duty of the hour becomes a part of her life. There is a dignity in self-reliance that I want to mention, for it is the one great password to success, and for this reason it is an essential element in the training of a skillful nurse. "Self-confidence sees the possibilities of the individual; self-reliance realizes them. Self-confidence sees the angel in the unhewn block of marble; self-reliance carves it out for himself." Self-confidence in the nurse looks beyond the limits of the sensible horizon and sees the halo of success in the dim distance. Self-reliance guides her feet in the paths that lead up to it. Self-confidence looks out into the future beyond the vale that obscures her mortal vision and sees success robed in splendor and crowned with honor; self-reliance enables her to reach forth her hand and claim them for herself; but self-reliance is not the self-sufficiency of conceit; neither does it include the boastful features of vanity. It is the broad and unprejudiced survey of one's real and genuine abilities; it consists of the majesty of calmness and the supremacy of self-control. Self-reliance does not permit the nurse to live in the shadow of another's greatness, but gives her independence by causing her to think and act and to depend on herself. The nurse must learn to be self-reliant if she would become skillful in her profession and successful in her work. She must have confidence in her abilities, a confidence that is born of careful preparation and judicious training. She must have the satisfaction of knowing within herself that she has had the proper training and clinical experience to meet the emergencies and crises that may arise at any moment for many times; perhaps she will have to stand face to face before the awful tragedy of life, which we call death. Then is the time that she needs self-reliance. Then is the time that she needs to be undaunted and undismayed in order that she may work intelligently.

How may a nurse develop her self-reliance? Not by trying to do her work as well as her companions; not by copying after some skillful student; not by making the fatal mistake of seeking continually to surpass another, but simply in striving earnestly to surpass herself. If she does this she is moving in a uniform line of progress and is acquiring skill along with her mental growth. The true conception in life is the competition of the individual with himself—in his present striving to excel his past. Thus far we have been considering some of the essential

qualities that should be employed in the "training" undertaken by training schools for nurses, viz., observation, order, patience, punctuality and self-reliance, and this training comes properly in the domestic duties of the institution. The other feature of her professional education is comprised in the hygienic and medical responsibilities of her calling.

The hygienic and medical education of the nurse is a matter of great importance. This embraces not only the care in the way of personal attention, but in having the proper surroundings to facilitate the patient's recovery. Of these may be mentioned the proper temperature of the room or ward, ventilation, preparation of the bed and the general observation in medical and surgical cases that go to make up an intelligent record sheet for the inspection of the physician or surgeon. Again, she must be educated in the fundamentals at least of medicine and surgery, which have their basis in physiology and anatomy. The trained nurse must have a knowledge of materia medica and the application of remedies to diseases. She certainly should have a thorough knowledge of infectious diseases and methods of prophylaxis and hospital quarantine, together with a knowledge of asepsis, antiseptics, etc.

This instruction comes largely through the course of lectures given by the hospital staff of physicians and surgeons. A prescribed course of medical education is arranged and outlined according to the time of the student and the requirements for graduation. This instruction is given by didactic lectures, clinical instructions at the bedside, class work, quizzes and the personal assistance in the operative work. The course usually embraces the following: Lectures on anatomy, physiology, materia medica, obstetrics, surgical technic, general surgery, chemistry, gynecology, diseases of children, general medicine, nervous and mental diseases, hygiene, diseases of the eye, ear, nose and throat, etc. The course of lectures and instruction should be made eminently practical. The nurse should not only have a theoretical knowledge or a scientific knowledge of these subjects, but she should be trained in the art as well —that is, in the application of her knowledge in the care of the sick.

The education and training of a nurse is of no little consideration. In every enterprise of life there must be responsibility, and the staff of physicians and surgeons that undertakes to educate and train a class of nurses in their medical duties should ever be mindful of their own responsibilities; and, on the other hand, there is a just amount of responsibility from the nurse due to the staff. The class should strive to do earnest, conscientious work in order that their diplomas shall mean something to the world and be an evidence of a careful preparation for their life work, as is given in testimony by the signatures of the hospital officials and medical and surgical staff.

In the requirements of scientific nursing, in respect to the hygienic and medical education, there is one thing that can not be too strongly emphasized, and that is the matter of asepsis—cleanliness. "Cleanliness is next to Godliness." If, as we have observed, in the training of the domestic duties of the hospital, that "order is Heaven's first law," surely cleanliness is the greatest. Scientific nursing requires a thorough knowl-

edge of asepsis—of surgical cleanliness. The nurse must not have a vague idea of it and give her consent to its claims in an indefinite and patronizing manner, but she must comprehend its deepest meaning and most rigid requirements. In order to be skillful and successful she must be thoroughly conversant with every detail in the application and requirements of asepsis, ever remembering that the surgeon must rely on her with implicit confidence that she not only understands this subject, but that she will faithfully carry out the measures with unswerving fidelity and honesty of purpose. For, in a large measure, the surgeon risks his skill and professional reputation in the hands of the nurse to whom is intrusted the matter of the preparation of the operating room and of the patient in surgical practice. But, of far more importance still, the patient may lose his life from neglect in aseptic precautions or from sheer ignorance of their importance.

The world is ever new in ideas and methods. Science is constantly bringing to light new facts, new discoveries, new and better facilities for the treatment of disease, for the relief of pain and suffering, for lengthening the span of human life. The nurse that has received a proper training may reasonably claim a part of this honor, for it is quite as important many times to rightly administer these means as to originate them. There is, in this work, room for the exercise of the highest talents and virtues of the highest order. Have we, then, placed the standards too high? Have we placed the ideals beyond your reach? Have we taken the goal of your ambition out of the real world and carried it up into the realm of the ideal, beyond the hope of attainment? No, not at all; not if you have the proper conception of life and of destiny. Not if you remember that life is simply a succession of opportunities, and that destiny is the outgrowth of possibilities. Then let me say, in a closing word to this class, that your chosen profession is a high and holy one, justly claiming the sympathy and approval of the community, meriting the confidence and esteem of the commonwealth of the great state in which you reside, commanding the admiration and respect of the entire world.

Your chosen profession is elevating and ennobling—elevating, because it reaches down into the depths of despondency and gloom, and out of these dark solitudes brings the bright rays of hope and the sunny beams of joy and gladness.

Ennobling, because its worthy ambitions are removed far above selfishness; your work is a work of self-sacrifice and of self-denial; your work is not only a work of the head and hands, but also of the heart. Your duties lead you in the quietude of lonely hours, to seek the pillows wet with sobs, the cheeks bedewed with tears, the bed of thorns that pierce the heart and, bending o'er them with outstretched arms, say: "In His name, and for His sake, let me do something for this distress." What a broad sea of opportunities! What a wide field of possibilities!

But, as you go out from your alma mater, as you launch forth to grasp these opportunities and to realize these possibilities, remember that you will encounter storms and tempests, as well as glassy seas and sunny skies. There will be some waves of opposition, some currents of advers-

ity, some tides of misfortune. There will be impetuous blasts and sudden gusts from clouded skies, that seem to sweep everything before them while they last; but along with these there also will be balmy gales and gentle breezes. Your alma mater is not sending you forth without chart or compass, adrift on the ocean of time! The landing port of success ever shines brightly before you, safely guarded by beacon lights along the way. Herein are the fulfillment of her hopes and promises; herein are the fruits of your years of patient toil and earnest endeavors. If your efforts sometimes seem barren of results, do not be discouraged. Look bravely toward the future, in confidence and hope, and proceed undaunted in your way.

The question will come home to your hearts many times, no doubt, as it has to the thoughtful of all ages, "Why is there so much unnecessary pain, sorrowing and suffering in the world—why, indeed, should there be any? Neither philosophy nor religion can give any final satisfactory answer that is capable of logical demonstration, of absolute proof. There is ever, even after the best explanations, a residuum of the unexplained. We must, then, fall back in the eternal arms of faith and be wise enough to say, I will not be disconcerted by these problems of life, I will not permit them to plunge me into doubt and to cloud my life with vagueness and uncertainty." Here, it seems to me, is the realization of the lessons in observation, order, patience, punctuality and self-control. Here is the picture of that perfect "training" that enables one to look with an abiding faith and with an unfaltering trust into the mysterious future—that wonderful mystery of time that yet remains for us and, even in the presence of death, to work with intelligent minds, skillful hands and consecrated hearts. And may this be the hour in which you make this consecration: The dedication of the individual life to the service of others; the dedication of the individual life to this noble mission; the dedication of the individual life to this worthy profession. And, as you pass across the threshold of your alma mater and turn with a kindly glance and a lingering look to bid her good-bye, she closes her doors on you forever as students only to open them again to welcome you back as her alumni, to greet you with her warm sympathies, to receive you in the kindliest manner. The past is forever closed to you; all of its joys and pleasures, all of its raptures and delights, all of its charms and gladness, have gone back into the ocean of years that makes up a boundless eternity. Only in memory can they ever become real to you again; only in reverie and dreams can you live again these gladsome days, with their pleasant associations and happy companionships, for the inexorable past has gone back with all its message, all its history, all its records to the God who loaned you the golden moments to use in the preparation of your life work.

ARTIFICIAL HYPEREMIA IN SURGERY.*

DR. ALEX C. WIENER.

FROM THE CLINIC OF DR. WIENER AT THE CHICAGO CLINICAL SCHOOL.

CHICAGO, ILL.

Inflammation, like fever, is one of those genuine faculties of the tissues with which Nature has endowed the mammal organism for defense against and the annihilation of enemies which have invaded the system. Inflammation, therefore, is not a disease itself. It is merely a symptom or sign of the presence of some foreign substance in the living tissue which threatens its integrity. Inflammation is, then, analogous to the violent cough after a foreign body has lodged in the throat or larynx, or the increased stream of tears and the frequent winking of the lids following the entrance of a foreign body into the eye.

The cardinal symptoms of inflammation—redness, heat and swelling—are all a consequence of a local hyperemia. Hyperemia results either from a slackening or an acceleration of the blood current. Hence there is a venous or passive and an arterial or active hyperemia. It is the former type which accompanies inflammation for the purpose of removing a noxious substance and of forming new connective tissue. Active hyperemia is a physiologic occurrence in organs which are in activity. The most practical agency to produce local active hyperemia is heat. Of all the manifold means of applying heat, hot air has been proven supreme. As active hyperemia is not the subject of this paper, I will directly proceed to give an account of the curative results obtained by artificial venous hyperemia which I have, last year, seen in Professor Bier's clinic in Bonn and which I have observed for the last three years in cases of tuberculous and rheumatic affections of the joints. The first to employ artificial passive hyperemia for a therapeutic purpose was Ambroise Paré. Von Dumreicher explained the action of venous hyperemia which is so favorable to the formation of callus in retarded union of fractured bones with the supposition that the abundance of blood stimulates the regeneration of osseous tissue supplying an increased amount of nourishment. Later on Nicoladoni, Thomas[1] and Helferich have confirmed Dumreicher's observations. While I have no personal experience along this line, since I rely on the ambulatory treatment of fractures and on liberal doses of iodid of potash in threatened pseudo-arthrosis, I have seen, with the combined aid of active and passive hyperemia, a deep cavity in the tibia fill up with surprising rapidity.

A girl, 8 years of age, badly nourished and anemic, presented herself, in the summer of 1902, at my clinic with a tumor in the middle of the shaft of the left tibia. The diagnosis of specific ostitis and periostitis was made and for eight months iodid of potash administered, since the mother did not permit operative intervention. As no perceptible change took place during this time, the patient was finally operated on. The chiseling away of a thick involucrum exposed a sequestrum nearly four

* Read before the Chicago Medical Society, Jan. 27, 1906.

1. Contribution to surgery and medicine, Part VI. The principles of the treatment of fractures and dislocations, London, 1886.

inches long and situated near the posterior wall of the tibia. No pus was found. With the aid of *x*-rays twice a week and passive hyperemia, the gap was filled with healthy bone in two months, while the formation of the epithelial covering took more than one year.

Varying with the tightness of application, the elastic bandage produces very different effects. Simple as the application of the bandage is in itself, it takes quite a little experience to meet just the requirements of a given case. It is evident that tight constriction is dangerous and harmful to the extremity when continued for over thirty minutes. For the reason that it lowers the temperature rapidly, Bier has signified it as "cold damming." On the contrary, warm damming is produced by applying the elastic bandage with a tension sufficient to compress the tender walls of the superficial veins, while the arterial circulation is not or but little encroached on. The patient, while under treatment, must be carefully watched. Coolness of the extremity, the appearance of vermillion red spots on the skin, complaint of pain or even incontinence are unmistakable signs of too severe a compression, whereupon the bandage must be removed at once.

In tuberculosis of joints the elastic bandage is applied for only one hour a day. In this way edema of the constricted parts is avoided. On traction, sufficient to produce a marked degree of stasis, the veins appear very much engorged and the skin assumes a bluish color. A slight pricking sensation toward the end of the hour is all the patient experiences. No discomfort, pain or edema must occur. The application is not to be made in the immediate vicinity of the afflicted joint; otherwise the place is immaterial. In treating the shoulder joint an elastic tube is used and held in apposition by a necktie and a loop encircling the chest, both made of muslin. A disc of soft felt protects the underlying parts against undue pressure. It is to be regretted that no way has been found as yet to have those frequent cases of tuberculosis of the hip-joint participate in the curative action of Bier's damming treatment. Misuse of the method has led to decubitus and even gangrene of the extremity. Chronic edema is another damage which may be laid to the charge of the noxious influence of constriction carelessly applied. In tuberculosis of joints complicated by fistula, this edema greatly increases the danger of mixed infection and erysipelas. Varicose veins, as it may easily be suspected, were never brought on by this treatment. In tuberculosis sicca venous stasis is of no avail. On the other hand, the cases complicated with pus infection are the ones most benefited. I have examined an old lady with general arteriosclerosis who was sent to Bier's clinic to have her arm amputated for an incurable mixed infection of a tuberculous inflammation of the elbow of long standing. After six weeks' treatment she had free and painless motion in the elbow joint and the fistulas had closed. Whereas her life was despaired of on admission, her general condition was then good. More than ten cases of tuberculous inflammation of the ankle joint I have examined at the different stages of treatment. Characteristic of them all was motion free of pain, actively and passively. The patients were encouraged to walk on the diseased foot as soon as the

pain had vanished. Furthermore, I was impressed with the complete absence of immobilizing dressings. If there are any axioms in medical science, the axiom of the necessity of complete immobilization in the treatment of tuberculous joints reigns supreme. Whatever arguments may be alleged in favor of immobilization, the facts show that immobilization is not the prime desideratum in the treatment of tuberculous joints. Three years ago I adopted Bier's treatment in tuberculosis of joints, with results not entirely satisfactory to me. After this first visit to Bonn, I freely confess that imperfect results are to be laid at the door of the surgeon who is doing the work. In all cases where adverse criticism may occur, the inference is permissible that mistakes in this apparently simple method have been made. On the other hand, its very simplicity may prevent those theoretical minds which I consider born, not made, from advancing along the right line and cause them to prefer more complex, because seemingly more scientific, methods of treatment. My own observations have fully borne out the correctness of Professor Bier's statement. I have been compelled to carry on this treatment in outdoor work and I have had to depend, to a large extent, on the intelligence and goodwill of the mothers. One case is illustrative: F. W., 3 years old, tuberculosis of the left ankle joint. The primary focus could no longer be established, since the leg had been operated on six months before. Two fistulas on the inside and outside below the ankles with an abundant discharge of green-yellowish pus. The foot held in an equinovarus position and could not be moved actively or passively. Treatment: The fistulas were packed with plugs saturated with concentrated carbolic acid and sealed with celluloid dressing. Damming with a rubber bandage for one hour each day. The fistulas healed up in the course of two months. The inner one opened again after four weeks and healed up in the course of another month. Joint movable in every direction. Boy walks and runs without difficulty and without a limp. The same patient had a tuberculous ulcer about the size of a 5-cent piece on the right cheek which healed up under carbolic-acid celluloid treatment in three months.

I have lately seen a child, two and one-half years old, with a combined tuberculosis of the synovial membrane of the astragalo-tibial joint and of the knee-joint. The foot, which was held in the usual equinovarus position, could not be moved. The region of the ankle and the whole foot shows edematous swelling. Knee flexed at right angles. Damming on the thigh for one hour each day mobilizes the foot in two weeks. No change, however, in edema. Mobility of the knee-joint only slightly increased. Forcible correction of the position of the knee-joint and fixation by method I have described in *The Chicago Medical Recorder*. The child permitted to walk at once on crutches, which were discarded after five weeks. This case, while by no means cured, illustrates the superiority of Bier's method over the immobilization treatment, which is imprinted so strongly on the mind of present-day surgeons. Now I come to an indication for the damming method, which I have not had much occasion to make use of myself, but which I have studied at Bonn.

It is in the treatment of acute infections of the extremities and of the head that Bier deviates most from time-honored principles. In fact, he revolutionizes our present mode of treatment to such an extent that even the mind trained in separating the hull from the grain in the current medical literature will follow his path hesitatingly. Yet Bier, in his publication in the *Muenschener klin. Wochenschrift,* Nos. 5, 6, 7, 1905, in *Langenbeck's Archives of Surgery,* makes such positive statements that it is impossible to resist the weight of his arguments. The superiority of his results proves his contention.

The fundamental difference between Bier's treatment and the one we have inherited from bygone generations consists in his view that inflammation is the biologic means of the organism to combat an intruder. Therefore, he denounces all antiphlogistic treatment as erroneous. Instead, he increases the supply of oxygen by slackening the current of the arterial blood. This is brought about by compressing the thin-walled veins of the extremity. The elastic bandage has to be applied in such a manner as to produce energetic venous stasis, without causing pain to the sufferer. Inasmuch as in acute inflammation comparatively light constrictions produce an immense hyperemia, it is apparent that the arterial blood current is not diminished by the damming method, but only slackened. The indications of the damming are (1) subacute mild inflammation of joints and soft tissues. These are rapidly relieved. (2) Acute purulent inflammations of soft tissues, either of the extremities or of the head. (3) Acute or subacute inflammations of joints and purulent arthritis, especially gonorrheal arthritis. The elastic bandage is at once applied for twenty or twenty-two hours.

As soon as pain or discomfort arises the bandage has to be removed and reapplied after some time at another place. Immobilization of the joints is contraindicated, also elevation of the limb, as this causes suffering. Pain and fever disappear with surprising rapidity. After the temperature has become normal, small incisions are made in the soft parts and the pus is aspirated out of the joints. It is an every-day experience that phlegmons of the extremities are often followed by severe disturbance of function. Surgery prescribes large incisions to be made so as to secure free drainage. Necrosis of tendons may occur. The pus infection early recognized and treated by the Bier method at once, will not come to such a sad issue as that. Small incisions then suffice for the aspiration of the sterile pus. The tendons are not exposed extensively and not dried out by gauze drainage which carries their nourishing fluid to the outside. In acute arthritis, especially in those cases of traumatic and gonorrheal origin, early passive and active movements can be made and thereby fibrous and osseous ankylosis averted.

I am inclined to ascribe the startling success of Bier's method in acute purulent diseases not to the influence of increased arterial blood supply exclusively, but to the temporary arrest and subsequent stimulation of the lymphatic current. The former must necessarily produce an edema which is surcharged with antitoxins. It therefore seems appropriate to signify Bier's method as an auto-antitoxin treatment. In other words,

the toxins or waste products which result from the metabolism of the bacteria which produce the infection are arrested and accumulate at the seat of war, as it were. This view is in accordance with the findings of modern biology. In the light of advanced therapeutics, Bier's methods are the logical sequence of Pasteur's, Behring's and Roux's work, and they should not call forth violent collision of opinion among surgeons, either from a practical or from a dogmatic point of view. Bier's work is marked with features which challenge an earnest trial on the part of every progressive surgeon.

TUBERCULOSIS OF THE MALE URINARY TRACT.*

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Within the last ten years there has been great development in the amount of knowledge we possess of tuberculosis of the genito-urinary organs. This development has been due to a number of causes, especially to the introduction of more refined means of diagnosis, and to a more careful study of both the clinical and pathological aspects of these cases. We are all familiar with the old doctrines, which were presented some years ago, of tuberculosis being primary in the epididymis in all cases, and that genito-urinary tuberculosis, which followed, resulted from an ascending infection. A few men held the view that most cases of genito-urinary tuberculosis were primarily in the kidneys, and that the cases where we had extensive involvement were examples of a descending infection from that focus. It has been pretty well demonstrated that there are three common foci of so-called primary tuberculosis of the genito-urinary organs. The term primary must be qualified, although we admit the possibility of a true primary tuberculosis of the genito-urinary organs, in the sense that the bacilli may gain entrance into the circulation and, without having first lodged at a point where the primary focus would be developed, they are carried direct to the kidney or to the epididymis. But such a true primary involvement is exceedingly rare. Still we can properly use the term primary involvement in this sense, that in almost all cases of tuberculosis of the genito-urinary organs a bronchial or tracheal gland, or some small lung or bone tuberculosis is the primary focus. From this there is entrance into the circulation of the tubercle bacilli, and then their lodgment, as in the elbow joint, or knee joint, at one or several points of the genito-urinary tracts, and these points are either the kidney, prostate, or epididymis. These are the three common primary foci of tuberculosis of the genito-urinary tract. It must be admitted that such a thing is possible as an ascending tuberculosis from the urethra, just as in a gonorrheal infection. It has been demonstrated in the laboratory that the injection of tubercle bacilli into the urethra is followed by the finding of bacilli after a time in the epididymis. It is maintained by some that tuberculosis can be produced by injecting the urethra

* Read before a joint meeting of the Chicago Medical and the Chicago Urological Societies, Jan. 24, 1906.

with tubercle bacilli, producing an ascending inflammation as from Neisser's diplococcus. Clinically, however, such a thing must be rare. I think it possible that with a mixed infection of the gonococcus and tubercle bacilli these cases do occasionally happen; but we must go back to the standpoint, that almost all cases of genito-urinary tuberculosis are through the circulation, secondary to a small primary focus at some point, which is latent or overlooked or overshadowed by the genito-urinary tuberculosis later.

As to frequency, is the epididymis, the prostate, or the kidney the common point of infection? For a long time it was taught that the epididymis was the common point of infection. I think the majority of the articles which we find in the literature to-day still maintain that view; I mean the point which is almost always involved primarily. But that is certainly erroneous. Later we began to learn that the kidney was very frequently the primary point of infection. Now, we are beginning to learn that the prostate is an exceedingly common primary point; not that prostatic tuberculosis is a great rarity, but that probably it is not very common. So far as the order of frequency is concerned, I believe that the kidney is the most common point of involvement; that the epididymis is second, and the prostate is third.

As to infection of the entire tract, if we have a primary tuberculosis of the kidney it is an easy thing for the ureter to become involved, then the opening of the ureter into the bladder, and later the bladder, and still it is well known that one may have primary tuberculosis of the kidney for years with tubercle bacilli pouring out from the ureter and into the bladder without any bladder involvement. Cases do occur of primary tuberculosis of a kidney where from this common point we have the ureter, the bladder, and sooner or later probably an ascending tuberculosis of the other kidney involved. And that brings up an interesting point, which is of great clinical importance, namely, whereas we used to believe that tuberculosis of the kidney was bilateral, the recent work of Simon, Kronlein, Israel, Mayo, and my own work has shown that tuberculosis of the kidney in more than 90 per cent. of the cases is probably unilateral, and that if the diagnosis is made early the natural result, or the natural conclusion which follows, is that a nephrectomy will frequently clean up the entire picture. Kidney tuberculosis is not very commonly followed by genital tuberculosis, at least not in the majority of cases. It is not a common picture to have primary kidney tuberculosis, with secondary genital tuberculosis. On the other hand, genital tuberculosis leads to involvement of the vas deferens, the seminal vesicles, prostate and bladder. Bladder tuberculosis is exceedingly common, but not as a primary lesion. Primary tuberculosis of the ureter is exceedingly uncommon, as is also primary tuberculosis of the urethra. One point in regard to the factors which may lead to the development of tuberculosis is to be emphasized. Too much cannot be said of its relation to gonorrhea as one of the means of injuring the genito-urinary tract and making points of less resistance, favoring the location of the lesion. It is rather hard to place the urethra in its proper place; that is, whether to classify it in this discussion as a

genital organ or as a urinary organ. As far as the clinical relationship is concerned between true genital tuberculosis and kidney tuberculosis, that is a matter of little moment. As a matter of fact, urethral tuberculosis is almost always secondary to prostatic tuberculosis.

In looking into the symptomatology of tuberculosis of the kidney, first of all, the point should be made that tuberculosis of the kidney very often runs a silent course, without a symptom, without the suspicion of the patient of any serious damage. I say that because several times I have had such an experience as this. Operating, for instance, upon a patient with a distinct, definite history of lesion of the right kidney, the time at which these symptoms developed was noted, and before that the patient believed herself to be in very good general condition. Nephrotomy upon the right kidney showed a large accumulation of pus. From the time the nephrotomy was made, not a drop of urine passed through the bladder. There were no symptoms referable to the opposite side at any time. Within a week the patient died. Postmortem examination showed the opposite kidney, which had never given rise to any symptoms, to be a sausage-like structure, composed of dense fibrous capsule, filled with a caseating mass, without a vestige of kidney tissue. That picture of silent tuberculosis not infrequently occurs. The ordinary symptoms are very similar to those which we find in several other conditions, stone, malignant tumor, polycystic degeneration of the kidney, pyelitis, and nephropyelitis from other germ infections. Blood is a common sign; also pus. Pain is common and is of two kinds, colicky pain, which simulates closely kidney stone; attacks and rather chronic tenderness and uneasiness, which is sometimes found also in kidney stone; temperature; presence of a swelling, in the advanced cases, where we have a tubercular pyonephrosis or perinephritic process present. In the early history there is no evidence of swelling. In the advanced cases again we have a general picture of tuberculosis, with temperature.

As to the differential diagnosis, we have been able to make it absolute in probably a little more than one-third of our cases by the finding of the bacilli of tuberculosis in the urine.

Here, for instance, is a kidney specimen which shows primary tuberculosis of the kidney, in which we had blood, pus, tenderness, some loss of weight, inability to work, the finding of pus, blood and tubercle bacilli in the urine. Nephrectomy was made, with resulting cure of the process. In the cases, however, in which tubercle bacilli are not found in the urine we must resort to diagnosis by a process of exclusion.

For instance, this is about the method which we have adopted in our clinic: In a case where we find tubercle bacilli and kidney symptoms, the picture is pretty definite. The presence of bacilli is, however, as stated, only made out in about one-third of our cases; where the presence of bacilli is not determined, the symptoms very frequently can not be differentiated from those of stone in the kidney. Here we employ the use of the *x*-ray. If the *x*-ray shows stone, well and good. If the *x*-ray does not show stone, with this general picture, we believe we have either to do with tuberculosis or hypernephroma. If there is no swelling, no enlargement,

if there is any temperature, we say tuberculosis. If there is enlargement, and no temperature, with the absence of stone, absence of tubercle bacilli, we say probably hypernephroma, so that we must arrive at a diagnosis in a number of cases by this process of exclusion. We have abandoned the tuberculin test as being dangerous and unsatisfactory.

In regard to the treatment of these cases of kidney tuberculosis, I want to refer again to what I regard as probably the most important point that has been brought out by our recent work, and that is, that in fully 90 per cent. of cases the disease is limited to a single kidney. In these the prognosis is excellent if the diagnosis is made early, and the prognosis depends almost entirely upon an intelligent surgical interference. That intelligent surgical interference is not nephrotomy, is not resection of the kidney, but is a nephrectomy, the removal of the kidney upon the involved side. All the early work in this line was largely done by resorting to nephrotomies, with unsatisfactory results. We very seldom have a radical cure of tuberculosis of the kidney from a nephrotomy. Occasionally it does happen, but, as a rule, where a nephrotomy is done a cure results only after a secondary nephrectomy. Resection of the kidneys we have tried in several cases without success. I had one case, in Dr. Billings' service, which I believed until recently was a successful case, where we resected about a third of the kidney in what appeared to be a limited tuberculosis of that organ. The man went to Colorado very much improved; he gained in weight, and only recently he returned to Chicago with a recurrence of the symptoms. He had the old colicky pain; he had five attacks which closely simulated stone. Dr. Kolischer made a very careful examination of the bladder for me. There was a normal bladder. There was distinct evidence of a tuberculous process at the orifice of the right ureter, which was the side on which we did resection, and there was a perfectly normal ureter on the opposite side; the ureter was catheterized and the urine on the left side was found normal. That is a case in which nephrectomy will almost certainly produce a cure. I do not know that I can cite a more definite piece of scientific surgical diagnosis than the work done in this case. I am sure that a nephrectomy would result in a cure, with very little chance of mortality. The mortality from nephrectomies, where one good kidney exists, is not great. Before doing nephrectomy in these cases we make a cryoscopic examination of the blood, and if that examination is —0.55 to —0.57, we do not hesitate to make a nephrectomy. If above —0.60 we hesitate, believing that such a blood state shows kidney insufficiencies and probably involvement of both kidneys

In connection with nephrectomy for tuberculosis of the kidney, in my own service we have now seven cases in which nephrectomy has apparently resulted in cure. There were some interesting points in connection with one of these, and I want to mention them to show the difficulties of diagnosis. The patient was a girl upon whom I had performed the operation of removal of the appendix. It is one of those cases in which a careful examination with the *x*-ray to determine presence of stone was not successful. She was treated for an appendicitis out of town, and came to me with a history of very sharp attacks. A Buffalo physician had the

case in charge and gave an intelligent account of the condition. He advised the removal of the appendix in the interim, after having made a definite diagnosis of appendicitis. I was a little in doubt. I suspected possible kidney stone and had several *x*-rays made of the case, but could not find stone. I removed the appendix, and within a short time the girl had a return of her old symptoms. While I was away she had a severe attack; they sent for Dr. Ochsner; he took charge of the case; he found kidney involvement, and removed a stone from the kidney. Following the removal of the stone the girl improved very materially. Within a short time, however, the old attacks returned. We then examined her with the *x*-ray with great care, and again with a negative result. The urine was then carefully examined and in it were found repeatedly tubercle bacilli. The ureters were catheterized; the left kidney was found to be normal and secreting normal urine. The tubercle bacilli and pus evidently came from the right side. Nephrectomy was made; the tuberculous process was extremely minute; it was difficult to locate any caseating mass at all. There were no giant cells, but there was a round-cell infiltration, and we were unable to determine the presence of tubercle bacilli in the tissue; but the repeated clinical findings of tubercle bacilli in the catheterized specimens taken with the histological findings, led us without hesitation to make a diagnosis of tuberculosis.

I want to show a number of specimens of kidney tuberculosis which I think are interesting. One specimen which I should like to submit for your examination is tuberculosis of the kidney, with extensive tuberculosis of the bladder. When we come to the consideration of tuberculosis of the bladder, I do not think the problem is as yet solved. My own handling of cases of tuberculosis of the bladder has been exceedingly unsatisfactory. We feel very well satisfied with our handling of cases of primary kidney tuberculosis; but so much can not be said with regard to tuberculosis of the bladder, whether it be tuberculosis of the bladder secondary to a kidney lesion, or tuberculosis of the bladder secondary to a prostatic tuberculosis, or tuberculosis of the bladder secondary to an ascending inflammation from the epididymis. We have drained these cases, with some relief. I believe, however, that the proper treatment of tuberculosis of the bladder is still to be discovered and taught to the profession.

SYPHILIS OF THE MALE GENITO-URINARY ORGANS.*

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The discovery of the spirochæta pallida as the probable cause of syphilis, is the most important bacteriological discovery of recent years. Schaudinn, who first detected this micro-organism in syphilis, is neither a clinician or a bacteriologist, but a zoologist; he has not considered human pathology except when he had occasion to study the morphology of

* Read before a joint meeting of the Chicago Medical and the Chicago Urological Societies, Jan. 24, 1906.

pathogenic protozoa. The literature of the subject has already attained voluminous proportions, and those who are best able to judge, accept this protozoa as the probable cause of the disease. Etienne Burnet, a preparateur of the Pasteur Institute, in a recent résumé of the subject, says: "The specific character of the spirochæta pallida is a probability which borders on certainty. There still remains the experimental production of the disease by pure culture." We hope that our knowledge of this protozoa will increase to such an extent as to render material aid to the clinic, but at the present time we must still rely on the clinical study of symptoms for our diagnosis of the disease.

The difficulties encountered in the diagnosis of syphilis of the genito-urinary organs, are the same as those encountered in the diagnosis of syphilis affecting any organ of the body, namely, it requires a knowledge of syphilis and also a knowledge of the diseases which syphilis may simulate to correctly diagnose a given case. Syphilis is a great imitator of other diseases, and affecting the genito-urinary organs, it may closely simulate any of the other diseases which affect these organs.

The Chancre:—Physicians are entirely too prone to depend exclusively on the presence of induration in the diagnosis of chancre. They do not sufficiently consider other points, such as outline, color, smoothness of the base, varnished appearance, etc. The clinician should have a regular order of examination in the diagnosis of venereal ulcers. The first point to be considered is outline, which in the chancre is regular. Next, we consider the depth; the chancre in its typical form is an erosion, and not an ulcer. It is surrounded by a collar of induration which elevates the border, and a sore which is superficial, presents the appearance of depth. The base is then to be studied. It is smooth, varnished and red in color. This is what the French call "Chancre en godet a bourrelet dure" and is one of the most characteristic forms. The appearance which it presents should be thoroughly photographed on the mind of everyone. Induration does not appear in a chancre until after the fifth day, and it attains its maximum development after the tenth day. Early induration suggests the diagnosis "gumma."

The Chancroid:—For years it has been recognized that it is at times impossible to make a differential diagnosis of chancre or chancroid. In Paris doubtful cases are admitted to the hospital and secretion taken from the sore is inoculated into the arm of the patient and covered with a watch-glass crystal. If the ulcer is a chancroid a pustule will form in 24 or 48 hours, and microscopical examination will reveal the presence of the Ducrey bacillus. This is a dangerous method and should only be employed on patients confined in hospitals. The base of the pustule should be immediately cauterized. The discovery of the bacillus of Ducrey as the cause of chancroid stimulated many to try to find a culture medium in which the bacillus would grow, and which might be utilized in the clinic. Petersen was the first to obtain a pure culture on agar-blood-serum in the proportion of 2:1. From that time, 1893, to date, constant efforts have been made to find a satisfactory culture medium, with varying success. Pure cultures could not be obtained with sufficient

precision to render this means an important diagnostic aid to the clinic. Lipschuetz has published an article giving a résumé of the work done in Finger's service in Vienna, which he states has been of material aid in the clinic.

The first efforts were made with commercial hemoglobin preparations, but without success. The method finally adopted was by making a culture medium composed of one part of blood and two parts of agar. A glass tube is introduced into the carotid of a guinea pig, and the required amount of blood is permitted to flow into each tube successively. One animal will furnish sufficient blood for twenty tubes. Tubes so prepared may be kept ten days. The tubes are placed in a thermostat for 24 hours and then their sterility is tested. Water of condensation forms on the surface of the blood agar, and is of itself a good culture medium. In every one of the hundred cases examined he obtained a pure culture. In one case clinically diagnosed a "gumma" he obtained a pure culture and the lesion healed in ten days when treated with a copper salve. In a number of cases, vegetating papules of the genitals and perineum which were clinically diagnosed as syphilitic, were shown microscopically to be Ducrey bacillus infections. Rona says that phagedenic chancroid is not a Ducrey bacillus infection, but an independent infectious disease. A spirillum is always present in the superficial necrotic tissue, and a bacillus in the deeper structures. Toxic material is absorbed into the circulation and produces symptoms of general infection.

Epithelioma of the Penis:—The diagnosis of a chancre from epithelioma of the penis is at times a matter of difficulty. Cases have been observed of patients with lesions of the penis which have been diagnosed epithelioma, the penis amputated, and shortly afterwards the secondary eruption has appeared. The sudden appearance and rapid development of the lesion should protect the surgeon from this serious blunder. One of the chief difficulties of diagnosis is the fact that epithelioma of the penis is apt to develop in those who have a syphilitic history. Where antiseptic dressings are employed an epithelioma sometimes improves in appearance, and potassium iodid when first administered, may improve the appearance of an epithelioma sufficiently to mislead the clinician into the belief that the lesion present is syphilitic. In all cases I believe that tissue should be excised and examined microscopically before the penis is amputated. The objection to fortifying the clinical diagnosis with the microscopical examination of the tissue is the danger of the operation stimulating the growth of the epithelioma. This rarely happens, and when the excised tissue is quickly examined immediate operation may be resorted to, if the growth increases in size.

Secondary Syphilis:—When lichen planus occurs on the integument of the genitals it is apt to assume the circinate form, in which case it is almost certain to be mistaken for syphilis by the general practitioner. In lichen planus the circle is formed by papules so closely set that they exert mutual compression. They are like a string of beads. The central area is never healthy integument, but exhibits depression, pigment and

atrophy. The syphilide which most closely resembles this, presents a single central papule surrounded by a circular chain of papules. On the mucous membrane of the urethra lichen planus presents the appearance of small, snow-white rectangular bodies arranged in rows and resembling leucoplakia.

The Papulo-necrotic Tuberculide:—In recent times a great deal of attention has been given to the tuberculides. This is any eruption of the skin which does not show the structure of the tubercle; does not contain the bacillus tuberculosis; will not produce tuberculosis when inoculated into guinea pigs; does not react to Koch's lymph, but which is inevitably associated with tuberculosis of some distant organ. The exact relationship of eruptions of the skin which comply with these postulates to the central focus of disease is still a subject of discussion. The most generally accepted theory is that they are produced by toxins. There are many forms of tuberculides; the form designated as the papulo-necrotic tuberculide, or follicles, is often difficult to distinguish from acne-like eruptions of syphilis. This form of eruption was called "acne necrotica of the extremities" and "acne cachecticorum" twenty years ago.

The advance which has recently been made in our knowledge regarding the pathology of this eruption is, that it has been shown that this affection is not a disease of the sebaceous glands and hence is not a form of acne, but is caused by a phlebitis in the derma. The eruption consists of acne-like papules in various stages of development. The papule is at first deep seated and gradually works toward the surface; when fully developed the papule is capped by a pustule, underlying which there is a central plug of necrotic tissue, the exfoliation of which leaves a pitted variolous-like scar. This eruption may readily be mistaken for syphilis. The genital organs are not the classical seat of the disease, though it may locate there. There is only one case on record (Du Castle's case) in which the disease was limited exclusively to the genital region.

Leucoderma very often affects the scrotum and penis. Some writers have endeavored to show that it is inevitably caused by syphilis. I am convinced that it is due to many causes, one of which is syphilis.

Elephantiasis or chronic edema, caused by syphilis, more frequently affects the face than any other part of the body. It is believed to be due to the formation of fibrous tissue in the derma. It is usually not affected by treatment, but persists as a permanent deformity. Affecting the scrotum, the skin is found to be red and markedly thickened; it does not pit on pressure. The tegumentary folds are obliterated and the scrotum is converted into a distended rigid sac; it is a veritable uniform hypertrophic sclerosis of the organ.

Syphilis of the Testicle:—Syphilis of the testicle in infancy frequently terminates in atrophy. There are two forms of syphilis of the testicle in adult life—sclerosis and gumma. Sclerosis is a hyperplasia of connective tissue which may affect one or both testicles. The organs enlarge to two or three times their normal size; they are very firm and hard; they annoy the patient through their size and weight. Under treatment they subside, but frequently a recurrence occurs if the treatment is discontinued, and after several attacks the condition becomes permanent.

Gumma of the Testicle:—One or both organs may be affected and there may be a single gumma present or a number. It is important to know that traumatism may be the exciting cause. In one of my cases the patient fell down stairs and struck his testicle against the newel post. There is absence of acute inflammation, enlargement of the testicle, usually some fluctuation at a given point, some hydrocele present, and often a history of the wife having repeated miscarriages, together with a history of early syphilitic infection in the patient in some cases. A chronic enlargement of the testicle with a small amount of fluid in the tunica vaginalis, is very suggestive of syphilis.

A young man, 25 years old, had an ulcer of the arm and a disease of both testicles. He consulted a surgeon who diagnosed tuberculosis, and performed double castration. The ulcer of the arm was treated with iodoform. Two months later the patient came under my observation. He stated that the bacillus tuberculosis had been found in excised tissue prior to the operation. The ulcer of the arm was a typical gumma, there was no excuse for calling it tuberculous. Extending along the entire incision, which was still gaping, was a gummatous infiltration. Both wounds healed rapidly under syphilitic treatment. The patient's wife had ulcerating gummata of the leg.

Malignant diseases of the testicle are usually unilateral, nodular, of large size and are apt to acquire adhesions to the scrotum, and the cord is often thickened. Syphilitic affections are smooth, the size is limited, it is often bilateral and there is less pain. Where a gumma is present, the testicle is decidedly lighter than when it is affected by malignant disease.

Syphilis of the Epididymis:—The epididymis alone may be affected by syphilis. In the early months of infection, six or eight nodules may suddenly develop in the upper head of each side. Later in the disease it may assume the form of a simple inflammation with deposits of plastic material and disappear under treatment, leaving fibrous tissue.

Syphilis of the Cord:—Campbell, Goldenberg and others, have reported cases of gumma of the cord. In a case observed by Verneuil the tumor was the size of two fists and diagnosticated as carcinoma. Its specific nature was discovered on postmortem examination. Reclus has reported a case in which the cord was stiff and rigid like a glass rod, and had attained the diameter of a lead pencil. In most of the cases the lesion was an almond-sized tumor, mistaken for a cyst.

Syphilis of the Penis:—A chancre of the meatus produces a ring of cartilaginous hardness surrounding the meatus, which, when seen before the tenth day, can only be detected by palpation. There is no change in the color of the mucous membrane; later, the mucous membrane presents a whitish appearance. It is usually accompanied by a discharge from the urethra containing the gonococcus.

Scleroderma of the Meatus.—A peculiar formation of sclerotic tissue may develop so as to surround the meatus, producing stenosis. When Swinburne showed his case at a meeting of the Society of Dermatology in New York, one member of the society thought it was due to syphilis and others to gonorrhea. Knowledge of the fact that scleroderma may

develop in this location, and the slow development of the lesion, should protect us from error in diagnosis.

Papular Syphilide at the Meatus:—Six or eight syphilitic papules may appear near the meatus in the absence of other lesions of syphilis. I have seen this eruption in congenital syphilis in boys from three to six years of age. The diagnosis depends on our ability to recognize the syphilitic papule. An ulcerating tubercular syphilide of the head of the penis on healing may produce phimosis. The patient complains of inability to retract the foreskin and he is annoyed by a constant discharge from the preputial sac. Adhesions may be present, or the inner layer of the foreskin may be firmly united to the head of the penis throughout its entire extent, completely obliterating the preputial cul-de-sac. Unless adhesions may be broken up and the foreskin retracted before operation, a circumcision should not be resorted to for the relief of this condition. It is preferable to make a dorsal incision and endeavor to separate the inner layer of the foreskin from the head of the penis, and preserve the outer layer of the foreskin, as it may be required for subsequent plastic operation.

Gumma of the Prepuce:—The most interesting syphilitic lesion of the genital organs is gumma of the prepuce and head of the penis. A gumma, occupying these locations, assumes the form of a plate of cartilage inserted under the skin or mucous membrane. When the foreskin is retracted it becomes inverted like the cartilage of the eyelid. A chancre begins as an abrasion and becomes indurated; a gumma begins as an induration and becomes an ulcer. It often develops at the base of a cluster of herpes, or in association with chancroids and it may follow the application of a caustic. It is almost always diagnosed a chancre. If the nature of the lesion is not quickly recognized and treated vigorously it may produce great destruction of tissue. Where we find tertiary lesions of syphilis on distant parts of the body and a chancre-like induration of the foreskin, we may be sure that the lesion of the foreskin is a gumma, and not a chancre, as we could not have a chancre of the penis with distant tertiary lesions.

Gummatous Infiltration of the Dorsal Lymphatics:—I have observed one case in which there was a neoplastic deposit involving the dorsal lymphatic vessels extending from the head of the penis to the pubis, and occurring late in syphilis. This is not an inflammatory condition, but a nodular neoplastic formation. It quickly disappeared under treatment.

Cylindroid of the Urethra:—This is the rarest of all syphilitic lesions of the genito-urinary organs. The entire urethra is converted into a hard, firm tube, composed of sclerotic tissue, with here and there gummata along its course. It has been mistaken for chronic cordee, chronic gonorrhea, especially where there was a discharge from a gumma, and for cancer. One of Fournier's cases was previously seen by a surgeon who diagnosed carcinoma, and abstained from operation only because of the extent of the disease. Complete recovery occurred under specific treatment. Gummata may form at almost any point in the corpus spongiosum or corpus cavernosum and rupture into the urethra, producing a discharge

from the meatus, or they may rupture externally, producing a fistula. In the presence of a fistula, especially an urethro-perineal fistula, the diagnosis of gumma is to be considered. Syphilitic ulcers of the bladder manifest their presence by hematuria; they can only be diagnosticated by cystoscopic examination.

Syphilis of the Ureter:—Prokoch has collected all the literature appertaining to this location of syphilis. He says that the most important case is one reported by Hadden in 1886. "The specimen was taken from a man, 55 years old, who died of strangulated inguinal hernia. The right ureter was dilated to twice its normal size down to a point four and a half inches from its entrance into the bladder. Below this point, the ureter was very small and its lower end just admitted the passage of an ordinary probe. The obstructing mass involved the bifurcation of the common iliac artery and both external and internal iliac arteries, with the accompanying veins, were tortuous and puckered from the obstruction of the inflammatory mass which surrounded them. The right kidney was entirely cystic and there were gummata in the liver and spleen." I consider this a case of retroperitoneal gumma compressing the ureter and not a gumma of the ureter. Schlagenhaufer has reported a somewhat similar case.

Syphilis of the Kidney:—Where it was known that nephritis was present at the time of syphilitic infection I have observed an increased rapidity of development of the nephritis, while the syphilis did not run a more malignant course. Where albumen and casts are present in the urine it is many times impossible to determine whether they indicate syphilis of the kidney or nephritis from other causes. The same may be said of postmortem findings; gumma is the only pathologic condition which is clearly indicative of syphilis. Early nephritis may occur in syphilis and entirely recover under treatment, or it may terminate fatally. In tertiary syphilis, gumma may produce a tumor of the kidney, which may lead the surgeon into error in diagnosis. Israel has reported two such cases. One case was that of a man, 39 years old, with syphilitic and malarial antecedents. He complained of continuous pain of the left side with a swelling at the tenth rib. An abscess of the spleen was thought of; an incision made, but only yellowish-white material escaped. The diagnosis of tuberculosis of the kidney was then made, and the organ removed. It was found to be gummatous. Amyloid degeneration, interstitial nephritis and gummata, are observed in the tertiary stage. The urine may contain blood, albumen and casts, or albumen and sugar. Patients with nephritis are best treated by inunctions, they frequently do not tolerate internal medication. The fact that a patient does not tolerate mercury administered internally, has led to the detection of nephritis in some cases. Where nephritic hemorrhage is present it usually disappears under treatment. Albumen may entirely disappear under treatment, or it may diminish to reappear when treatment is discontinued. Where albumen and sugar are both present we have not observed much improvement from treatment. Gummata have been found in the suprarenal capsule.

Syphilis Hereditaria Tarda:—Where ulcers and other lesions of obscure character occur on the genital organs, late hereditary syphilis should be considered as a possibility of diagnosis. It is known that this is more obstinate to treatment than any variety of the disease. Edmond Fournier has reported the following case: A man, 29 years old, entered the hospital with a phagedenic ulcer which had been present eight months and had been treated as a chancroid. It had destroyed the foreskin and most of the head of the penis, exposing the corpus cavernosum and perforating the urethra. He also had exostosis of the temporal bone, a periosteal gumma of the sternum, leukoma of both cornea, remains of chronic ophthalmia of infancy. Hutchinson's teeth, scars in the gluteal region and frontal bosses. His father had been treated for syphilis. The lesion healed promptly under syphilitic treatment.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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MARCH, 1906.

THE STATE SOCIETY. WHAT IS IT?

During the period of reorganization of our county societies much confusion arose regarding the relation of the county to the state society. This confusion still exists in the minds of many, and these, especially if officers of the local societies, should set themselves to the task of once for all mastering this relation. They should secure copies of the constitution and by-laws of both the county and state societies and study them. Formerly each member of a county society paid dues to his county secretary or treasurer, and each member of the state society paid dues to the treasurer of the state society. Under the old plan these were separate and distinct organizations, having only a very loose relationship to each other. Under the reorganization all this is changed. First, we should realize that there is now no such thing as "state society dues." The individual members do not pay dues to the state society any more than a member of the Methodist Church pays dues to the conference. The House of Delegates, composed of representatives from each county society, levies a per capita assessment on the members of the affiliated county societies, and the county society collects a sufficient amount from each member to defray its current expenses and to pay this assessment. Le-

gally and officially, the House of Delegates is the state society, and transacts all its business in just the same way that a Methodist Conference, or a Grand Lodge, transacts the business for the churches or lodges in its district. The state society has no members, excepting as every member of a county society is entitled to vote for a member or members of the House of Delegates. The members of the county society are not members of the House of Delegates (the official state society), but each member is represented in that body, for he has participated in the election of a member of the House of Delegates. Therefore he is expected to, and must, pay his pro rata of the expenses of conducting the business of the organization of the state, which has been authorized by the House of Delegates. This he does in the form of a per capita assessment, which forms part of the dues he pays to the county society. He pays no dues to the "State Society," if by this is meant the annual meeting for scientific and social purposes, for it incurs no expense.

Besides the meeting of the official state society, the House of Delegates, there is also held annually at the same time and place a convention of the members of the various county societies, for which a scientific and social program is prepared by the officers appointed for that purpose. All members of county societies are entitled to attend and participate in this program. If we call this convention the "state society," which we do, then there are no "state society dues," for this "state society" incurs no expense except a very small amount for the program of the annual meeting. The reason for calling prominent attention to this matter is that it seems that there are some who object to paying "state society dues," since they never attend the meetings. They seem to forget that the money is spent for the good of the membership of the whole state. Not one in a hundred Masons or Odd Fellows attends the sessions of the grand body of these organizations, but they do not complain of the per capita tax paid each year for the support of the organization. They know that such a tax is proper and right and for the best interests of all concerned.

It is impossible to get uniform work in our various county societies if the plan of organization is not fully understood and appreciated by each one. The plan is not new. It has been in operation in some states for a hundred years, and is the plan on which churches, secret societies and other organizations have been and are conducted. It has been applied to medical organization for the sake of uniformity. It is a machine, in that it provides opportunities for men to co-operate systematically and effectively, and at the same time it in no way interferes with individuality. It favors rather than retards the full development of the individual. Every member has equal rights and privileges with every other member. It makes the county society the important body, encouraging its growth and usefulness.

After familiarizing ourselves with this plan, each member should constitute himself a committee of one to see that not only the members of the county society, but every physician in the county fully understands the plans and purposes of the organization. Such a campaign will mean thousands of new members for the county societies in Illinois, and an infinitely better understanding of the word "fraternity."

THE DUTIES OF COUNTY SECRETARIES.

In another column will be found an open letter from Dr. E. W. Weis, Secretary of the Illinois State Medical Society, addressed to all county secretaries in the state, calling attention to the necessity of an immediate and full report of the membership of each county society. Without doubt, all of our county secretaries will at once respond to Dr. Weis' request. But this serves to call attention to one of the fundamental differences between medical organizations of former times and those of the present day, as well as a corresponding difference in the duties of secretaries. In previous years the principal function of the county society was to hold meetings. These were often well attended and were of great profit to the members. But between meetings there was little manifestation of society life. The principal duty of the county secretary, therefore, was to keep the minutes of the meetings. Membership was obtained by attendance at a meeting and was generally held by continued attendance or lost by non-attendance. If a member by failing to attend several meetings forfeited his standing, he lost nothing else thereby.

To-day, a different condition exists. As shown in the preceding editorial, each county society is an integral part of the state organization. It has certain duties and responsibilities toward the larger organization. Its members have certain rights and privileges, viz., membership in the state society, receipt each month of the ILLINOIS MEDICAL JOURNAL, and eligibility to membership in the American Medical Association. It is hoped that protection against malpractice and damage suits will soon be added to these privileges of membership.

Since each member of each county society, in good standing, is entitled to these privileges, it follows that it is most necessary to be able to determine, at any time, the standing, as a member, of any individual physician in any county in the state. If he is a member in good standing, he is entitled to THE JOURNAL. If he has not paid his full dues, he is not entitled to it. The only way in which this can be regulated, without injustice to the member, on one hand, or to the state organization, on the other, is by having positive and reliable sources of information regarding

each member's standing. This information must come from the county secretary. On him the officers of the state organization must at all times rely to keep them supplied with official information regarding all of the members of his society. Not only during and in relation to meetings of the county society do his duties exist. The secretary is the executive officer of the organization. On his shoulders, more than any other one man, rests the responsibility for success or failure. He should be the most active, energetic, resourceful and accurate man in his society. He will have many duties. These duties will all be important. But no one will be more important than that of promptly and accurately reporting membership changes to the state secretary.

DR. M'CORMACK'S VISIT.

As announced in the February number of the JOURNAL, Dr. H. C. Mitchell, our State President, has made arrangements for Dr. J. N. McCormack, Chairman of the Organization Committee and National Organizer for the American Medical Association, to spend the month of April in Illinois. Dr. McCormack's letter in reply to Dr. Mitchell's invitation, at the request of the Board of Trustees, that he devote the month to work in our state, is as follows:

BOWLING GREEN, KY., Feb. 3, 1906.

DR. H. C. MITCHELL, President Illinois State Medical Society, Carbondale, Ill.

Dear Doctor:—I find that arrangements have been made for me to work in Tennessee, covering the whole month of February. I could give the month of March to Illinois, but I am under the impression that the condition of the roads is likely to be such as to greatly interfere with the attendance at the meetings. If you think this true, I could arrange to give March to North Carolina, and spend the entire month of April in your state. Be kind enough to write me at Bowling Green, at your earliest convenience, what you think had best be done about the work. Whichever month is selected, you and your Council will have ample time to arrange the itinerary and give the matter some publicity through the A. M. A. and State journals.

In this connection, I would like especially to urge the importance of securing the attendance of laymen at all meetings. The invitation should include senators, representatives, municipal and county officials, the pastors, Bar and Teachers' associations, druggists, W. C. T. U. and other clubs, as well as business men generally. I am discussing the scientific and business affairs of the profession, the "patent medicine" question, and other matters of this kind before popular audiences every day, and I find that it enables me to strengthen the profession with the public in a way that has never seemed possible before.

Asking your advice about these matters at your earliest convenience, and with assurance of personal regard, I am, cordially yours,

J. N. MCCORMACK.

Dr. Mitchell sent out, under date of February 19, the following letter to all county secretaries and general officers of the Illinois State Medical Society:

My Dear Doctor:—Dr. J. N. McCormack, who, as you know, is organizer for the American Medical Association, will devote the entire month of April to this

work in Illinois. He will begin his itinerary in the Ninth Judicial Councilor District, which is located in the extreme Southern end of the State, and will take the districts, according to their geographical arrangement, going from South to North through the State.

In the work of medical organization, Dr. McCormack has no superior in the United States. The work he is doing is of the highest order and includes not only the medical profession, but the laity as well. There is a great demand for this kind of work throughout the entire country, because it brings the profession into closer and more harmonious relations and teaches the physician his duty to his patient, and the patient his duty to his physician. Dr. McCormack invites the general public to all of these meetings and wants all classes of thinking people, such as lawyers, doctors, ministers, farmers, laborers, womens' clubs, temperance organizations, county officials, congressmen, legislators and United States senators.

Dr. McCormack says that often after he has delivered his lecture the physicians in attendance say that it is too bad that the general public could not have been invited, as it would have been just as instructive to them. We hope this mistake will not be made this time, as Dr. McCormack will visit our state only once and if the general public is not invited, it will be too late to rectify the mistake.

Trusting that you will give the matter wide publicity, I am, cordially yours,

H. C. MITCHELL, M.D.,

President Illinois State Medical Society.

Dr. Mitchell has also issued the following open letter to the medical profession of the State:

CARBONDALE, ILL., March 13, 1906.

To the Medical Profession of Illinois—Gentlemen:—At a meeting of the Judicial Council of the State Medical Society in Springfield in January it was decided to invite Dr. J. N. McCormack of Bowling Green, Kentucky, who is chairman of the Committee on Medical Organization of the American Medical Association, to come to Illinois and devote the entire month of April in lecturing to the doctors of Illinois on Medical Organization. The entire expense of this tour is paid by the American Medical Association and will cost us nothing but our time to come out and hear him. The members of the Judicial Council have appointed the places of meeting, as they think, to the very best advantage over their districts. As Dr. McCormack has only a limited time to be with us, it will be impossible for him to reach all the counties in the state.

Dr. McCormack is doing a grand work, and is one of the brainiest men of the nation, and it is earnestly hoped that every doctor in Illinois will avail himself of this rare opportunity, otherwise he will miss a rare treat. He not only wants to talk to the doctors, but to the thinking portion of the laity as well. Consequently it will be in order for you to bring your friends and patrons with you.

We herewith append a copy of letter written by Dr. McCormack to the doctors of Kentucky.

Trusting that the members of the medical profession of Illinois will resolve themselves into a committee of one to push this matter, I am,

Yours most obediently,

H. C. MITCHELL,

President Illinois State Med. Society.

The following letter was sent by Dr. McCormack to physicians of Kentucky in advance of his organization meetings:

Dear Doctor:—At the request of the Council of the State Medical Association it has been arranged that I shall visit as many localities in Kentucky as possible during the month of May, speaking to popular audiences of "Things About Doctors Which Doctors and Other People Ought to Know," of "The Danger to the Public from an Unorganized and Underpaid Medical Profession." I enclose the dates and plan of the trip, and am writing to ask for your personal help and

coöperation in securing the attendance of every doctor and influential layman in your section the day I am to speak in your county, whether you are a member or not yourself. The meeting will be held at the Court House unless otherwise announced.

While my work is all done at the expense of the American Medical Association the meeting is held under the direction of your society, and entirely for the benefit of the individual doctors and people of your county. In order to do you the good intended, it is important that your wife and your influential patrons come out with you. I am going to talk about the business side of medicine, as well as many other things, and will not only advise but convince all laymen present that bad business methods and poverty in the profession are far more dangerous to them than to us. I am trying to expose and remove the popular prejudice against us in the public mind, and to prove that our interests are all mutual, and it is remarkable to see how responsive laymen are everywhere to these appeals when properly put. You can say to them it will not be a dry, technical talk, but one that they will understand and be interested in quite as much as the doctors.

The only purpose of my visit is to help you and your people, and I can do nothing for you and your friends unless you are there with them. You can well afford to do this, as I promise to make the day worth more than any month's practice you have ever done. I suggest that you invite lawyers, preachers, teachers, farmers, druggists, business men, and especially ladies.

Asking you to come a little early so that I can have an opportunity to meet and talk with you before I begin to speak, I am,

Cordially yours,
J. N. McCORMACK.

The following letter has been sent by Dr. E. W. Weis, Secretary of the Illinois State Medical Society, to all of the county secretaries:

Dear Doctor:—President Mitchell has just written me, enclosing a letter from Dr. McCormack, in which he suggests that he give the month of April to Illinois, instead of some prior time. Dr. McCormack has accepted that month and has made arrangements for meetings as follows: Carbondale, April 2; Mt. Vernon, April 3; Centralia, April 4; Decatur, April 5; Olney, April 6; Newton, April 7.

This brings him to the middle of the state. As this selection of time allows for further consideration and maturing of plans, the president desires you to make all necessary exertion in preparing for these meetings. I enclose herewith a copy of Dr. McCormack's letter, which will outline his work and the kind of audience he desires. Please communicate with Dr. Mitchell regarding your place of meeting and selection of date. These meetings will be announced in the ILLINOIS MEDICAL JOURNAL and should also be thoroughly advertised in the newspapers of your district. Yours very truly, E. W. WEIS, *Secretary.*

The itinerary for Dr. McCormack as arranged to date is as follows:

District 9—Dr. J. T. McAnally, Councilor. April 2, Carbondale; April 3, Mt. Vernon.

District 7—Dr. E. E. Fyke, Councilor. April 4, Centralia; April 5, Decatur.

District 8—Dr. C. Barlow, Councilor. April 6, Olney; April 7, Newton; April 12, Champaign.

District 6—Dr. Carl E. Black, Councilor. April 9, Pittsfield, Quincy; April 10, Mt. Sterling, Virginia, Jacksonville; April 11, Carrolton, Carlinville, Alton.

District 5—Dr. J. W. Smith, Councilor. April 13, Lincoln; April 14, Bloomington.

District 4—Dr. O. B. Will, Councilor. April 16, Galva, Rock Island; April 17, Monmouth, Macomb; April 18, Peoria.

District 2—Dr. W. O. Ensign, Councilor. April 19, Pontiac; April 20, Ottawa; April 21, Sterling.

District 1—Dr. J. H. Stealy, Councilor. April 23, Freeport; April 24, Rockford; April 25, Aurora.

District 3—Dr. M. L. Harris, Councilor. April 26, Joliet; April 27-28, Chicago.

The place of these meetings, as well as other local arrangements, will be announced in the various towns and Councilor districts by letter and through the local press.

The extensive tour recently made by Dr. McCormack through the Northwest and West for the purpose of advancing medical organization is well known to all physicians who have followed the progress of organization work in the last six months. Among the states recently visited by him was the state of Texas, to which he devoted a month. Following Dr. McCormack's visit Dr. I. C. Chase, Secretary of the State Medical Association of Texas, wrote a letter to each of the Councilors of his state, asking them for an expression of opinion regarding the work done by Dr. McCormack in the state and the benefits which accrued thereby to the local organization.

In order that the members of the Illinois State Medical Society may form an adequate idea of the results of this work, the letters of the state councilors of Texas are abstracted:

Dr. M. Smith, Sulphur Springs, Councilor, Fourteenth District:

Since the visit of Dr. McCormack many of the county societies have adopted a different line of study. Many of them are doing very creditable postgraduate work. A large majority of the towns have organized local societies, the idea being to study medicine in all of its branches from a scientific standpoint, to infuse new life and energy into the members. These local societies are not intended to interfere in any way with the county society, but to act as a nucleus. I think Dr. McCormack has done a great work for all classes of medical men and the results will be in evidence for years to come. All those who have heard his lectures were of the unanimous opinion that they will redound to the good of the medical profession.

Dr. S. T. Turner, El Paso, Councilor, First District:

Dr. McCormack only made one address in my district, at El Paso. All felt they were much benefited by his talk.

Dr. T. J. Bennett, Austin, Councilor, Seventh District:

Dr. McCormack caused the profession to begin thinking and then acting. At first the impression made upon many was depressing, but the facts began to take root and then the evolving of ways and means brightened the horizon and real action in the district began. Following his tour through the State, county societies have made out plans for postgraduate work. Bastrop County Medical Society has divided its members and assigned to each one some different subject. Clinical demonstrations are to be a part of each program and a review of each department is required in the course of the year. Williamson County Medical Society and Travis County Medical Society are emphasizing the clinical feature. The most pronounced work is being done by the society as a whole. The proposition is to establish a postgraduate clinic in connection with one of the hospitals in Austin. The demonstrators are to come from any point in the district, or by invitation from elsewhere in the State or outside the State. Programs are to appear as often as the material can be secured, laboratory work is to be continuous, including urinalysis, analysis of stomach contents, bacteriology, etc. The prime motive is scientific advancement with equal privileges to all. The only requirement is membership in the district society. The eleven counties in this district favor the postgraduate clinic idea.

Dr. G. B. Foscue, Waco, Councilor, Twelth District, writes:

Dr. McCormack's talks have had the best possible influence toward promoting harmony and good will among the physicians of this territory. Several county societies have profited by the suggestions that he made regarding postgraduate work. Johnson County now holds a largely attended meeting each week, in place of the small monthly meetings that they held before Dr. McCormack visited them. Probably the greatest advance in scientific medicine that has ever occurred in Texas was the organization of the Anatomical and Pathological Society at Waco, as the direct result of Dr. McCormack's lecture along this line. This society is now devoting three nights each week to scientific dissection work, under competent anatomical demonstrators. After June 1 the society will study microscopy under efficient instructors, and work on this line during the warm weather. Great enthusiasm characterizes the meetings.

Dr. D. R. Fly, Amarillo, Councilor, Third District, writes:

The greatest good that Dr. McCormack did was to inject enough stamina into the spinal column of the profession to cause them to demand compensation commensurate with their services, especially from corporations, lodges, etc., and to cause a better feeling of fraternalism in the profession. Our course of study includes presentation and reports of clinical cases, papers and discussions, also quizzes on diseases prevalent in our section of the State. Dr. McCormack's system of holding public meetings is a marvelous success. The securing of the interest of intelligent laymen is a strong factor in settling local animosities among the profession. The intelligent public is quick to grasp the situation and to declare themselves ready to lend their support and co-operation to all legitimate reforms. I have been surprised at the interest and sympathy shown by the thoughtful and progressive laymen.

Dr. Holman Taylor, Marshall, Councilor for the Fifteenth District, writes:

Dr. McCormack's visit was of great value to all who heard him or came in touch with him. The great trouble is that so few heard him. He spoke three times in my district. The doctors who heard his lecture were entertained, instructed, encouraged and enthused. They are better men and better doctors today for having heard him. The laymen of the communities in which he spoke have undoubtedly formed a different opinion of the practice of medicine and those who take part in it, and the new opinion is to our mutual advantage.

Smith County has taken up a course of study along practical lines, with special attention to clinics. Camp County has taken laymen into its organization as honorary members. Bowie County has united with the Miller County (Arkansas) Medical Society for study and investigation, with special attention to clinical work. They meet weekly, at night. Anderson County has taken up the course of study recommended by Dr. McCormack. Cherokee County has taken on new life and is very enthusiastic. Wood County has taken up a special study of sanitation and proposes to educate the laity through the public press.

The above work is being accomplished directly or indirectly, as a result of Dr. McCormack's work, and I am daily adding to his indirect credit column.

COUNTY SECRETARIES, ATTENTION!

OTTAWA, ILL., March 6, 1906.

To the Secretaries of the Component County Societies of the Illinois State Medical Society:

I am advised by the American Medical Association that the forms of the American Medical Directory for the State of Illinois will close April 1. In order to have the names of the members of the Illinois State Med-

ical Society properly entered in the Directory as members, it is necessary that information regarding all members in good standing of all county societies, all removals, suspensions, etc., must be reported to the American Medical Association not later than March 30.

I therefore earnestly request that all secretaries of county societies, whose duty it is to report regarding county society membership, immediately send to me names of any new members, changes or additions, in order that this information may be at once forwarded to the editor of the American Medical Directory for insertion. Unless this information is forwarded me by that time, responsibility for the error or omissions will lie with the county secretary. Very truly yours,

E. W. Weis,
Secretary Illinois State Medical Society.

OFFICIAL NOTICE.

There will be daily demonstrations of laboratory methods during the Springfield meeting of the Illinois State Medical Society. Regarding the program, it should be understood that there will be some changes in the order of papers from that furnished Secretary Weis some time ago.

Jas. H. Stowell, *Chairman Section One.*

OFFICIAL COMMUNICATION.

Rutland, Ill., March 8, 1906.

To Secretaries of Component Medical Societies:

As the various Councilors of the respective districts of the State Medical Society are about to send out, to Secretaries of local medical societies, blanks for their annual reports to Councilors, it is desired to call attention to the following points of importance:

First.—These blanks will be supplied in duplicate and should be so filled out and completed. One of them should then be forwarded to the Councilor of the district and the other preserved among the records of the component society as a basis of future reports and for purposes of later reference and comparison of society data.

Second.—The reports at this time desired are intended to cover the time only, from the date of the close of the reports made in April or May last to Dec. 31, 1905, a period of some seven or eight months. This is done in anticipation of conforming, in the future, to a recent amendment of the law of the State Medical Society requiring its fiscal year to coincide with the calendar year.

Third.—Secretaries are requested to carefully study the page of "General Summary" and to complete it with neatness and accuracy.

Fourth.—As the period for which these reports are to be rendered has already terminated with the year 1905, there can be little cause for delay in promptly preparing and forwarding them to the proper Councilors.

Fifth.—In this connection it is recommended that component societies thoroughly investigate the important subject of "Medical Defense," in order to be prepared, through their respective delegates, to express their desires in the matter, whenever the State Medical Society shall attempt the further consideration and disposition of the question at the forthcoming annual meeting.

WM. O. ENSIGN, *Chairman Council.*

IN MEMORIAM.

The following resolutions were adopted by the Effingham County Medical Society, following the death of the President, Dr. Sumner Clark:

RESOLUTIONS OF RESPECT.

WHEREAS, It has pleased the all-wise Father to remove from our midst our elder brother, the President of our Society, and the Nestor of our profession in the county: therefore, be it

Resolved, That we take this method of expressing our sense of loss in the sudden demise of Dr. Sumner Clark, a man of noble attainments in his profession, a pioneer in years, but an able exponent of all that is best in the practice of modern medicine, a student, first and last, possessing an intellect at once alert and comprehensive, and capable of grasping diseased conditions with rare accuracy, and, above all, a citizen and gentleman of unblemished honor and integrity—a man high minded and sympathetic in all his social relations, and bequeathing to us an example of fidelity to his profession and unwavering devotion to duty.

Resolved, That a copy of these resolutions be forwarded to the family of the deceased, with expressions of our condolence and sympathy; and, furthermore, that they be spread upon the records of the Society as a memorial of our appreciation, esteem and work of Dr. Clark.

(Signed) J. N. MATTHEWS, M.D.
C. F. BURKHARDT, M.D.
J. B. WALKER, M.D.
Committee.

The above resolutions were adopted by the Effingham County Medical Society, at its regular meeting March 13, 1906.

M. E. KEPNER,
Second Vice-President.

C. F. BURKHARDT,
Secretary.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY MEDICAL SOCIETY.

The regular meeting of the Adams County Medical Society was held in Quincy at the Elks Club, February 12, with President John A. Koch in the chair. Those present were Drs. Becker, Burch, Christie, Center, Ericson, Fletcher, Koch, Knox, Liesen, Montgomery, Pfeiffer, Rice, Robbins, Rosenthal, Reticker, K. Shawgo, Wessels, G. G. Williams, W. W. Williams, Wells and Zimmerman. The meeting was called to order at 11 a. m. and routine business was transacted until 12, when an adjournment was moved until after luncheon. The afternoon session was occupied by a symposium on pneumonia, the papers of Drs. Koch, Ashton and Reticker being upon the bacteriology, pathology, symptoms and treatment, respectively.

Drs. Robbins, Knox, Center, Zimmerman, Montgomery, Nickerson, Rice and Christie participated in the discussion. GEORGE E. ROSENTHAL, *Secretary.*

CROUPOUS PNEUMONIA: BACTERIOLOGY AND PATHOLOGY.

JOHN A. KOCH, M.D.
QUINCY.

We have for consideration to-day a disease that is attracting more interest and attention by the profession than any other, with the possible exception of tuberculosis. Croupous or lobar pneumonia is an acute disease in which a specific parasite invades the air cells of one or more pulmonary lobes, where it grows in a fibrinous medium exuded from the functional capillaries and generates a toxin that infects the system at large. The subject is one of vital importance on account of its frequent occurrence, the fatality attendant upon it, the increase in the number of cases in certain localities and the fact that one attack rather predisposes to another than tending toward immunity. The disease has been known for centuries, and, notwithstanding our acquaintance with its manifestations, it has as yet defied the efforts of clinicians and bacteriologists. Indeed, when the knowledge of the profession is summed up the result is very unsatisfactory. It is not known to a certainty whether pneumonia is a general condition with a local manifestation in the lung or whether it originates in the lung and from this location elaborates the toxins which may become incompatible with life. The essential phenomena of pneumonia, it is now conceded, are due to the action of one or more forms of bacteria. Bacteriologists in general insist that pneumonia is caused by the *Diplococcus pneumoniæ* of Fraenkel, also known as the *Diplococcus lanceolatus, pneumococcus,* etc.

In order to identify an organism as the etiologic factor in a given disease it must pass the requirements formulated so well by Robert Koch. The more thoroughly bacteriologists understand the best methods of investigating the life and habits of the pneumococcus the more positive do they become in asserting it to be the exciting cause of pneumonia. All the requirements of Koch's laws are fulfilled in regard to the diplococcus with the exception of the first, namely, the constant and uniform presence of the organism in the affected tissue. Under the latest methods the germ has been demonstrated in 132 cases out of 145 investigations. As a rule, in the greatest majority of genuine primary pneumonias the diplococcus is found, but in traumatic secondary pneumonias there are also found various bacteria, such as the *Bacillus pneumoniæ* of Friedlander, streptococci and staphylococci.

The *Diplococcus pneumoniæ* is a non-motile organism. In the tissue of a pneumonic lung it shows a distinct capsule, while cultivated artificially it is without one. The culture media must be alkaline and consist of agar, blood serum or bouillon, but a growth will not result under 70° F., while a temperature of 95° is better. The life of the pneumococcus in moist sputum is of considerable duration,

the average period being less than two weeks unless exposed to direct sunlight. Under ordinary conditions this sputum dries in the course of a few hours or days, and the dried masses retain their virulence for a long time and, becoming powdered, distribute the pneumococci in the air. In sunlight or in diffuse daylight the bacteria in such powder die within an hour. The diplococcus is stained with the usual diluted alcoholic coloring solutions. In conditions secondary to pneumonia the pneumococcus is also found, such as pleuritis, pericarditis, peritonitis, meningitis, endocarditis, arthritic affections, etc. Independently of pneumonia it can be demonstrated in otitis media, epidemic cerebrospinal meningitis, etc.

The germ is invariably discovered in enormous numbers in the exudate contained in the alveoli, and, notwithstanding it is believed to be the exciting cause of pneumonia, it is found to remain indefinitely in many healthy noses, mouths, throats and lungs without inducing the disease. It is still a mystery under what conditions the diplococcus receives added virulence to start a pneumonic process. By some it is argued that the organism going below the glottis into the deepest air passages induces the disease. It may also enter the air cell through the circulation and lymphatics. The diplococcus in the air cell excites an irritation in the delicate structure that separates the interior of the cell from the functional blood supply derived from the pulmonary vessels. An exudation from the functional vessels follows, and the coccus at once finds itself surrounded by a medium suitable for its multiplication. The conditions as to temperature, etc., are similar to those in artificial cultures in the laboratory. The microbes increase rapidly, more exudate is poured into the cell, where the process is repeated, cell after cell and lobule after lobule being invaded. All this time the cell wall is nourished by its nutrient blood supply from the bronchial vessels, and is almost as indifferent to what is going on in the space which it incloses as is the glass of the culture tube to the process within it.

From the moment that the culture process begins, the specific toxin also begins to be formed, and is at once absorded into the circulation. From this we have the chill, the high temperature, the prostration and all other evidences of a virulent infection. The rapidity with which the toxic products finds its way into the system is due to the favorable conditions presented by the great vascularity of the lung and the enormous surface from which absorption takes place. So long as fresh supplies of toxin are being formed—or, in other words, so long as the consolidation is spreading—so long the toxemia will be maintained. But here, again, as in artificial cultures, there is a limit beyond which the process can not extend. A given quantity of a culture medium can maintain the life of a given number of germs only for a certain time. Beyond that time the changes produced in the medium render it unfit as a soil for the further growth of the organisms, and the death of the latter puts an end to the process. With the supply of toxin cut off, the temperature falls. If the invasion has been regular and rapid, coming to an abrupt termination with the complete consolidation of the lobe, the supply of the toxin will cease abruptly and we shall have defervescence by crisis. If, on the other hand, the effusion into the air cells has been gradual, and the process of consolidation slowly carried forward, the supply of toxin will continue in one part while it fails in another; the process will be prolonged and the defervescence will be by lysis. It is also believed by many that an antitoxin is formed in the system that causes the crisis, but no satisfactory results have been obtained in a sufficient number of cases to warrant the use of a pneumococcus serum.

To Laennec, the inventor of the stethoscope and the discoverer of auscultation, we are indebted for the foundation of the conception of pneumonia upon a correct anatomical and clinical basis. He differentiated three well-defined and easily-noted stages of the disease: engorgement, hepatization and purulent infiltration. Pathologically the appearance of the lung may be classed into four stages; engorgement, red hepatization, gray hepatization and purulent infiltration. In the stage of engorgement the lung tissue is deep red in color, firmer to the touch and more solid, and on section the surface is bathed with blood and serum. It still crepitates, though not so distinctly as healthy lung, and incised portions float. The air cells can be dilated by insufflation from the bronchus. Microscopic examina-

tion shows the capillary vessels to be greatly distended, the alveolar epithelium swollen and the air cells occupied by variable numbers of blood corpuscles and detached alveolar cells. The lung tissue, in the stage of red hepatization, is solid, firm and airless. If the entire lobe is involved it looks voluminous and shows indentations of the ribs. On section, the surface is dry, reddish-brown in color, and has lost the deeply congested appearance of the first stage. One of the most remarkable features is the friability, a hepatized organ can be readily broken by the finger. Careful inspection shows that the surface is distinctly granular, the granulations representing fibrinous plugs filling the air cells. On scraping the surface with a knife, a reddish viscid serum is removed, containing small granular masses. The smaller bronchi often contain fibrinous plugs. If the lung has been removed before the heart, it is not uncommon to find solid molds of clot filling the blood vessels. Microscopically, the air cells are seen to be occupied by coagulated fibrin, in the meshes of which are red blood corpuscles, polynuclear leucocytes and alveolar epithelium. The alveolar walls are infiltrated and leucocytes are seen in the interlobular tissues. Cover-glass preparations from the exudate and thin sections show, as a rule, the diplococci, many of which are contained within cells. Staphylococci and streptococci, as already mentioned, may also be seen in some cases. In the stage of gray hepatization, the tissues have changed from a reddish-brown to a grayish-white color. The surface is moister, the exudate obtained on scraping is more turbid, the granules in the acini are less distinct, and the lung tissue is still more friable. Histologically, in gray hepatization, it is seen that the air cells are densely filled with leucocytes, the fibrin network and the red blood corpuscles have disappeared. The fourth stage, purulent infiltration, is a more advanced condition of gray hepatization. The lung tissue is soft and the surface is thickly coated with a thin purulent covering. The stage of gray hepatization appears to be the first step in the process of resolution, and, in the fourth stage, the tissue has finally reached the highest grade of softening, the cell elements are disintegrated and rendered capable of absorption.

In more than half of the cases the right lung is affected, especially the lower lobe; it is rare, however, to have a pneumonic condition in the upper lobes alone. As a rule, the unaffected portion of the lung is congested or edematous. The pleural surface of the inflamed portion is invariably involved when the process becomes superficial.

Complications of pneumonia are really expressions of the pneumococcus infection in other organs or tissues. We may see the following complications: Pleurisy, endocarditis, meningitis, nephritis, arthritis, phlebitis, colitis, peritonitis, otitis, parotitis, conjunctivitis and general mucous membrane infection. In the lung itself abscesses or gangrene may occur. The mortality in pneumonia ranges from 20 to 40 per cent. in hospitals and from 10 to 30 per cent. in private practice. It varies greatly, however, in different years. In the two extremes of life, it is high, the lowest percentage being between the ages of 10 and 25. The death rate may also be materially increased on account of alcoholism, exposure, traumatism, old age and the inhalation of deleterious gases. Pneumonia appears to be more fatal in southern climates. The causes of death in pneumonia in healthy subjects are usually due either to the simultaneous infection of other organs, as the meninges, the endocardium, myocardium and pericardium, the pleura and other structures with the pneumococcus; or a toxemia, the degree of which does not depend alone on the extent of lung involved or of any structure invaded, but on the virility of the infection and the condition of the patient. A pneumococcus septicemia is induced. The toxemia is indicated by nervous symptoms, as in the typhoid state, by progressive cardiac weakness, and by diarrhea and meteorism. Heart failure may be induced by this toxemia or by overdistension of the right heart. Recent investigations have shown that death occurs in practically all cases where the pneumococci enter the circulation and when a diminution of the white blood corpuscles occurs. Death from mechanical interference with respiration is very rare.

SYMPTOMS OF PNEUMONIA.

L. B. Ashton, M.D.
QUINCY.

Hippocrates defined pneumonia as "a rapidly fatal disease characterized by sputa of various colors." We can now draw the lines somewhat more closely and consider the various phases and degrees in its symptomatology under two general heads, the lobar form and the lobular form, or bronchopneumonia. Lobar pneumonia under its several names we now understand to be a specific fever, having its principal lesion confined to the lungs and their pleural coverings. The organism once having invaded the system, however, travels widely and may be far-reaching in its destructive action on other tissues. In noting at the bedside the symptom-complex, one is impressed by the regularity with which the symptoms present themselves as manifestations of the various pathologic changes observed in the laboratory, now so classically defined, keeping pace directly with the progress of the systematic and local infection. This is the form common to young adult and middle life, and presents in these a fairly clear clinical picture. The lesion is usually unilateral, with the right lower lobe as its favorite seat. Probably it is very shortly after the general invasion has occurred that the initial chill is felt, this being evidently toxic in origin, all the subjective and objective symptoms following quickly in its train. These are a sense of oppression and pain in the chest; anxiety, as indicated by the troubled expression and active mind; a bounding, angry pulse; hurried breathing, with the alæ nasi dilating at each inspiration, followed by an expiratory grunt. The cheeks are suffused almost to a dusky hue, the eyes are bright, the skin dry and burning hot. It may also be noted that one cheek is more deeply colored than the other, often pointing the affected side fairly accurately at a glance. Herpes labialis appears quite early from the nervous and vasomotor disturbance induced. The tongue is furred, the urine scant and dark in color, showing by a chemical analysis an absence of chlorids. Their early return may be taken as a favorable sign. The bowels are usually constipated; the sputum, at first catarrhal for a short time, soon becomes more viscid and blood stained, assuming a chocolate hue, the so-called prune-juice sputum, which, in itself, may be taken as almost pathognomonic of this disease. The temperature is high from the beginning, continuing so until the crisis, which usually occurs on from the fifth to the ninth day, occasionally even at an earlier date. A return of high fever after the crisis, a pseudo-crisis, is rather unfavorable.

An early examination of the chest reveals a halting form of respiration; fine crepitations are heard over the congested lobe, similar in character to the sound produced by rubbing one's hair between thumb and finger. Soon the normal rustle of the vesicles is obscured by the harsher broncho-vesicular and bronchial breathing, incident to alteration in the sound-conducting quality of the lung tissue, the result of advancing consolidation. This change is further evidenced by the sharp quality of the tactile fremitus detected over this area. Motion is restricted or in abeyance on this side. Percussion demonstrates the resonance over the affected lobe to be changed in pitch, while a sense of increased resistance is imparted to the examining finger; the notes elicited shading out, as the changes within the lung structure succeed each other, to relative or absolute flatness, modified somewhat by the location of the focus, whether superficial or deep. Compensatory hyper-resonance is heard over the adjacent and opposite lobes. Nervous symptoms, ranging from a mild delirium to a profound typhoid state, may develop, particularly in alcoholic subjects. A blood examination shows a decided leucocytosis. Radiographic observations might also be called into service, if added evidence were desired, to indicate the shape and extent of the consolidation. Following the crisis, these findings begin to disappear in reversed order, and with this a new feature is added; moist, coarse râles are now discovered—the râles redux of the old authors—while the sputum is soon altered to a muco-purulent condition and is more freely expectorated; these changes in turn gradually grow less marked until the normal respiratory murmur is again restored.

Lobular pneumonia, or broncho pneumonia, while differing in its etiology and

pathology, has some points in common with the lobar form in its clinical manifestations, with several distinguishing features. This disease is most frequently met with in the two extremes of life and appears to be more local than general in character. It is frequently bi-lateral and irregular in its distribution, the foci being found in patches or islands throughout the lungs. In children it may be primary, though is often secondary to some infectious fever. It may develop insidiously, or, not infrequently, be ushered in by an attack of vomiting or a convulsion. To this is added languor, restlessness and quickened respiration, with the phenomena of dilating nares already mentioned; a suppressed occasional cough; irregular fever; skin dry and hot, or else bathed in perspiration; the cheeks may also show a bright flush or be alternately flushed and pale. In older children, thoracic or abdominal pain may be complained of, the latter anomaly being a not infrequent source of error in diagnosis, the observer directing his attention to the abdomen entirely, to the neglect of the thorax. Pain in this locality is explained by the fact that the lower intercostal nerves have their peripheral distribution over the diaphragm and abdominal wall, and these refer pleural irritation to their superficial branches. Inflammation of the abdominal viscera may generally be excluded by the fact that deep pressure will elicit but little increased tenderness. The cough soon becomes more irritable, causing the child to cry by its persistency. On auscultating the chest the same hesitating pause at the end of each inspiration is detected, swelling into a moan or short grunt on expiration. Sibilant and fine crepitant râles are widely scattered. Expectoration in infants is absent, probably swallowed; in older children it is muco-purulent. The pulse is quick, but relatively small. Percussion affords so little added information because of the natural resilience of the undeveloped chest as to make it a needless and irritating part of one's routine in examination. Nervous symptoms may complicate the disease from an early date. The temperature, after running an irregular course for from one to three or five weeks, finally falls by lysis, leaving the little patient utterly exhausted, with convalescence slow in returning.

As a clinical entity this form of pneumonia may be said to occupy the middle ground between the asthenic type seen in the aged and the sthenic lobar variety of vigorous adults. Broncho pneumonia in the aged usually assumes so marked a difference in the character of the symptoms developed to those in children as to warrant its description as a sub-class of this disease, and the adoption of the generic name of senile pneumonia as being more restricted and suggestive. Perhaps the most constant early symptom of this disease is prostration, the patient showing a disposition to take to bed without apparent cause. If to this is added anxiety, some fever, or, perhaps, a copious perspiration, a slight futile cough and an expiratory grunt, the existence of this process is highly probable. The temperature varies; it may be high, moderate, normal or subnormal. Nervous symptoms of a more or less severe grade are common. Moist, bubbling râles are heard all over the chest, bronchial breathing is present, while a suspicious pause is noted following each inspiration. Hypostatic congestion in the posterior portions of both lungs makes the auscultation and percussion findings more frank here than elsewhere; the cough is not a prominent symptom and may be absent, the sensory nerves being so blunted as to take no note of any irritation. The expectoration, when present, is muco-purulent, tenacious as glue and expelled with difficulty, more often not raised at all, the alveoli becoming filled with a collection of this, mixed with the débris of cellular elements, which sooner or later must overwhelm the patient from its toxic effect or drown him in his own secretions. The resisting force of his tissues now becomes so depressed as to make the prognosis a gloomy one, the scene usually closing by the patient sinking into a comatose state with the development of mucous rattles in the throat. These latter, while they may precede death from one to three days, in my experience always portend a fatal issue.

TREATMENT OF PNEUMONIA.

JOHN K. RETICKER, M.D.

QUINCY.

When a diagnosis of pneumonia has been made, a trained nurse should be placed in charge of the patient, if circumstances will permit. A light, well-ventilated room should be selected. An abundance of fresh air should be insisted upon and the temperature kept between 65° and 70° F. I have often experienced much trouble in obtaining the fresh air and correct temperature for the pneumonia patient, as the laity fear the patient will catch cold. At the onset, when the pleuritic pain is at its height, hot or cold application may be used to relieve pain. Strapping the chest often answers the purpose. Occasionally we will have to resort to a hypodermatic injection of morphin. The various kaolin preparations are often applied to the chest, but I believe an absorbent-cotton jacket is just as good and is worn with much more comfort by the patient. If the fever is high enough to demand special treatment, a cold pack to the forehead and cool alcohol baths will usually suffice. All depressing antipyritics should be avoided. I most always begin medical treatment by a thorough course of calomel, followed by a saline. If the cough is distressing and the sputum scanty, I usually prescribe a mixture containing syrup Dovers and ammonium carbonate. The ammonium overcomes what little depression we would get from the Dovers and, I believe, aids expectoration. I begin giving carbonate of creasote early in 15-drop doses every three hours and have come to place much confidence in it. It is antiseptic, antipyretic and expectorant. I have yet to see the first case in which the fever ended by crisis when creasote was begun early.

The important item in the treatment of pneumonia is to support the patient. The heart now has an extra amount of work to do and is also weakened as the result of toxemia. An examination should be made each day. So long as both heart sounds are distinct the patient's condition is satisfactory, but if sounds are indistinct, pulse rapid and weak, respiration rapid and patient pale and bathed in perspiration, the heart is flagging. In combating this condition I rely chiefly upon strychnin and whisky, although digitalis, strophanthus and nitroglycerin are valuable drugs and often used. Large doses of strychnin and whisky should be used if occasion demands. I have given 1/15 grain of strychnin, followed by 1/20 every three hours until results were obtained. Venesection is recommended to relieve the blood pressure when the patient is robust, with flushed face and rapid, noisy breathing. I have never practiced venesection, but I would if relief could be obtained in no other way. The sputum should be collected in some suitable receptacle and burned. The mouth should be cleansed several times a day with some good antiseptic solution.

The diet should be light—one which will not cause dyspnea by distention of the stomach and enfeeble the heart by overtaxing the digestive powers. Milk, if well borne, may be used as an exclusive diet, or whey, meat juice, broth and egg albumin may be given. Cold drinks are acceptable and beneficial, as they promote the action of the kidneys and so help to eliminate the accumulating poison. The serum treatment of pneumonia has not come into general use because there has been little evidence of its real value.

CHAMPAIGN COUNTY MEDICAL SOCIETY.

The Champaign County Medical Society held its regular meeting in the parlors of the Hotel Beardsley, Champaign, February 15, 2:30 p. m. Dr. Ellen Miner read a paper on whooping-cough. Dr. John Martin read a paper on colds. Both papers were well prepared and the discussion that followed was principally on Dr. Martin's paper. The following members were present and took part in the discussion: Cushing, C. F. Newcomb, Hess, Burns, Yantis, Wall, Lyons, Johnson, Mandeville, Shuetz, Powers, Craig, Gulick, Collins, A. L. Collins, Foelsch, Miner and Martin. The usual business was transacted and the society adjourned until next regular meeting in April.

C. M. CRAIG, *President.*
C. D. GULICK, *Secretary.*

CHICAGO MEDICAL SOCIETY.

Regular meeting, Jan. 10, 1906, Dr. Carl Beck in the chair. Dr. F. C. Hotz presented a patient showing the permanent result of his operation for ectropium of the lower eyelid.

OPERATION FOR ECTROPIUM OF THE LOWER EYELID.

F. C. Hotz, M.D.

CHICAGO.

This lady kindly consented to come before the society to give me an opportunity of showing the remote permanent result of an operation for ectropium of the lower eyelid, which essentially differs from the operations that have been and still are usually performed. I would suggest that the members take a look at the patient first, so that we will not retain her too long, while I make a few remarks as to the history of the case. At the time of the Iroquois Theater fire in this city this patient escaped with her life, but with the left side of the face badly burned. The result was complete eversion of the lower lid, due to the cicatricial contraction of the facial skin. In the spring of 1904 an attempt was made by some one to relieve the ectropium by partially uniting the lid margins at the external canthus and putting grafts upon the wound after dissecting the lid up. This operation was a complete failure, as you can see by the picture which I will pass around, showing the condition when the patient came to me in December, 1904. You see the union of the lid margins plainly by a sharp black line. The operation I performed was done on the 17th of January, 1904, so that sufficient time has elapsed to make sure that the result is permanent. This result, which is certainly as perfect as we can desire, was obtained by a mode of operating founded upon the anatomic conditions of the normal lid. In other words, I strove to restore the anatomic conditions of the normal lid.

There are two points of great importance in this regard. The first is that the normal lid skin is very thin, adapting itself to the configuration of the lid and following all the slight movements of the orbicularis muscle, by which the facial expressions are changed. You notice in this case when the lady smiles the lower lid of the left eye moves up just as easily as the lower lid of the right eye. The second point is that the lid skin is well demarcated against the skin of the cheek along the infraorbital border and fastened to the border, so that the heavy mass of the cheek can not pull the lid down. You can push the cheek up, but you can not by any traction upon the skin of the cheek disturb materially the position of the lid. But put your finger above the infraorbital margin and the slightest traction upon the skin will cause an eversion of the lid.

To select the proper material for the destroyed lid skin is an important point, and the cicatricial skin found in the neighborhood of the lid after these burns (and the majority of cases of ectropium of this kind is the result of extensive burns) is admirably suited for our purpose, and I avail myself of it in every case that I can. I outline a large flap in that cicatricial skin below the everted lid margin. I begin the incision near the nasal end of the lid, pass the knife down and slightly obliquely, turn it around in the cheek and pass it up toward the temporal end of the lid. As this cicatricial skin contracts considerably when it is dissected out, the flap, of course, must be taken of liberal dimensions to be large enough to cover the lid. It is dissected up toward the lid margin, then the cicatricial bands and strands underneath which hold the lid everted are cut, and in fact excised, until the lid can be moved up into its position. You have then a large semilunar flap connected with the lid margin. The convex border of this flap is then fastened to the orbital fascia, just above the infraorbital margin, by fine silk sutures, closely inserted, so as to insure a perfect union of the flap margin with the fascia; and in order to prevent any wrinkling of this flap during the first stage of healing I put two ligatures through the lid margin, stretch the lid margin up so that it actually is bent convexly upward, and hold it in that position by the ligatures which are fastened to the forehead with plaster strips. The resulting wound below is then covered with a Thiersch graft. I take one graft for the whole wound. With a good razor and a little practice it is not difficult to cut a proper

graft of the proper size from inside of the arm to cover this whole wound area. The flap is carried on the razor from the arm to the wound, dumped down and spread out uniformly, so that its edges overlap the edges of the wound. No sutures are necessary. The whole is then covered with rubber protective and gauze compresses wrung out of warm boric acid, and on top of that another protective is applied to keep it damp, and over this a layer of cotton to insure proper warmth. The whole dressing is secured by a bandage. The union of this flap covering the lid insures the patient absolutely against recurrence of the ectropium. The margin will not be displaced, even if the whole Thiersch graft should not take, even if you allow the whole wound below the lid flaps to cicatrize, because the traction of the shrinking scar acts upon the lower margin of the lid flap, which is securely fastened to the orbital fascia and can not be pulled down because the fascia is attached to the bone. No traction of this scar can move the tissues of the lid, and consequently can not exert any traction upon the lid proper. That is one of the greatest advantages of this operation. The second point is that we have a thin covering of the lid, which is as close to that of the normal lid as we can get it, and will look like the skin of the other lid. The configurations of the lid are restored as nicely as possible and even the movements of the lid are restored for proper facial expression. As to the Thiersch graft, I want to call attention to it because at a former meeting of this society great stress was laid upon the fact that the Thiersch grafts shrink so much that they are complete failures in the operation for ectropium. They have been failures, it is true; and they had been a failure in the former operation in this case. The Thiersch grafts shrank, and they will shrink if you let them, but if they have no chance to contract they will not do so. In this case a graft was put on this wound, one edge of which was fastened at the infraorbital margin, while the other edge of the wound has very little mobility because it is the rigid scar tissue of the cheek. You see, if that graft wants to shrink it is resisted by the margins of the wound. It can not and did not shrink much. But if the operation is done in the old fashion, if instead of outlining this flap the incision is made just along the lid margin, the lid margin is dissected up to be put in its proper position, and then this wound from the lid margin to the cheek is covered with Thiersch grafts, it is no wonder that these grafts shrink a good deal, because the movable lid margin can not offer any resistance. The cheek here is the resistant part; the flap is united with this and with the free border of the lid, and traction of the shrinking flap is exerted entirely upon that movable border and naturally will pull it down; the inevitable result is the return of the ectropium. That is not the fault of the grafts, but the fault of the method of operating.

In conclusion let me say that this is not an exceptional result, but that I have obtained the same success in a number of other cases operated on by this method—a method which I can conscientiously recommend to you as far superior to the old flap operations.

Dr. Emil Ries showed a patient with exophthalmic goiter who had been materially benefited by the use of thyroidectin.

EXOPHTHALMIC GOITER TREATED WITH THYROIDECTIN.

Dr. Emil Ries.

CHICAGO.

In January of last year this patient was brought to me from a distant town on a stretcher. She was unable to walk any distance. She was greatly emaciated. She had exophthalmos and Graefe's sign, a pulse of 112 to 120 and a goiter. She was salivated; she vomited; she looked sallow, and she was sent to me for operation. The patient weighed at that time seventy-three pounds. She was put on thyroidectin, which only a short time before had been recommended, and which you know is the blood of the thyroidectomized goat. She took as much as she could take. She was put to bed and took the thyroidectin for nearly a month. During the first month under thyroidectin she gained twelve pounds. Her pulse went down to about 96. The salivation disappeared completely. Her color improved somewhat.

Her goiter did not shrink very much. Exophthalmos was slightly less, but her general condition improved considerably. She could take food. The patient continued to take thyroidectin off and on until September of last year, but since then she has not had any. She now weighs 141 pounds, a gain of almost seventy pounds. She has received no other medication except this. Her pulse, when I examined her two days ago, was 120. The goiter has shrunk considerably and the exophthalmos is not at all marked now. She can eat, as you may gather from the fact that she has gained seventy pounds. She does not vomit any more. She is not salivated. Menstruation had been absent for a considerable time before she came to me, and she did not menstruate until some time in the summer of 1905. But for the last three months she has menstruated regularly without any local treatment. I simply show this case as an example of what thyroidectin may do. It may be interesting to know that a sister of hers also has exophthalmic goiter, as I have been told by the family physician, and she has had the insanity of Graves' disease. Her sister has never taken thyroidectin to any extent. She started it, continued to take it for two or three days, but as she disliked the taste of it she discontinued its use. The most important feature in this case is the remarkable improvement in the patient's general condition.

Dr. William L. Ballenger:—I would like to ask Dr. Ries as to the method of administering the thyroidectin, the dosage, etc.

Dr. Ries:—It is administered by the mouth in doses of 15 grains a day and increasing to 60 grains a day. It is given in capsules. The 60 grains a day would be divided into three doses.

Dr. A. H. Andrews:—Has she been given any mercury?

Dr. Ries:—No.

Dr. Thomas L. Gilmer showed a patient, illustrating the treatment of fractures of the mandible.

TREATMENT OF FRACTURES OF THE MANDIBLE.

THOMAS L. GILMER, M.D., D.D.S.
CHICAGO.

In the treatment of fractures of most of the bones, universal splints, plaster-of-paris splints or adhesive or other bandages may be employed with good results following. In the treatment of fractures of the mandible none of these methods give the best results and in some fractures of the lower jaw they are quite inadequate, especially in multiple fractures. Fractures of the mandible are generally compound and unless the two ends of the broken bone are nicely adjusted, the secretions find their way in between the fractured ends with infection following. This nice adjustment can not be obtained by the use of bandages whether they are of the ordinary or plaster kind. The simplest method which will completely immobilize the fragments is the wiring the teeth of the mandible to those of the upper jaw, making a splint of the teeth of the upper jaw. Indeed, this is the only rational method of treatment of fractures of the mandible other than wiring through the bone, which is rarely called for, when the line of break is in the body of the bone posterior to the teeth or in the ramus. The only objection to this method is due to the fact that the mouth can not be opened, but this objection is of minor consideration since there is always sufficient space between the teeth to permit feeding with liquid diet. The teeth should not be secured in this manner until the stomach has been emptied of solid food as there would be danger in case of emesis, but the setting of the bone need not be done until digestion has taken place. This method is not difficult and may be employed by any physician moderately skillful in the use of instruments. German silver or phosphor bronze wire may be employed, as each has great tensile strength and is pliable and not likely to twist off in its adaptation to the teeth at their necks. I introduced this method in 1886 and I and others have employed it with great satisfaction in many cases.

In fractures of the mandible, when there are two or more teeth posterior to the break, the ideal method of treatment is one I am presenting in a case tonight for your consideration. It is a method by which the fragments are com-

pletely immobilized and rigidly held so. By this method the patient is able to open and close the mouth and masticate soft food. This is a method of splinting far superior to the interdental splint. An impression is taken of the teeth of the mandible, a plaster cast is made from this. It is then sawed in two on the line or lines of fracture if there is displacement, which is usually the case. The cast is then reconstructed and a splint formed on this, either of vulcanite or German silver. The teeth are now dried and the splint is cemented onto the teeth, using the cement employed by dentists for setting crowns and bridges. This is a modified form of a splint introduced many years ago by the late Dr. W. W. Allport of this city, later employed by Mr. Christopher Heath of London, but had passed into disuse until recent years from lack of a suitable cement material to secure it to the teeth.

This young man was attacked by thugs on the 24th of December last and struck a blow with the fist, breaking the mandible between the central and lateral incisors. On December 27th I took the impression, reconstructed the cast and formed the German silver splint which he now wears. The splint was applied on the 28th. Upon examination you will find the fragments of the jaw held immovable and he has the free use of the jaw.

Dr. Frank Allport read a paper on "The Indications for the So-Called Radical Mastoid Operation," which was discussed by Drs. Norval H. Pierce, Henry Gradle, J. Holinger, William L. Ballenger, Thomas J. Gallaher, Otto J. Stein, Bayard Holmes, Joseph C. Beck, F. C. Hotz, and the discussion closed by Dr. Allport.

INDICATIONS FOR THE SO-CALLED RADICAL MASTOID OPERATION.

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The so-called radical mastoid operation is a natural evolution from the ordinary mastoid operation and is almost exclusively used for the permanent cure of chronic purulent otorrhea. It was noticed that a discharging ear generally became cured after a mastoid operation, and from this observation sprang the conception of thoroughly divesting the temporal bone of all pathologic accumulations through the pathways of the mastoid process and meatus. This was first called the "Stacke operation," from Professor Stacke, who proposed entering the antrum from the middle ear and meatus. Professor Schwartze then proposed entering the middle ear and meatus from the antrum, and it was then called the "Stacke-Schwartze" operation. From this the term "radical mastoid operation" was evolved, and thus it is known to-day, and easily takes its place as one of the most complicated and important of the great modern surgical procedures. It is but rarely used in acute mastoid abscesses and should only be then undertaken in case of unusual tympanic necrosis, where brain complications are suspected, and perhaps not even then. Generally speaking, it should only be used in the event of intractable chronic purulent otorrhea, and this inevitably opens the discussion as to what interpretation should be placed upon the word "intractable." This expression is susceptible of many meanings, according to the personal equation and experiences of various observers, extending all the way from the ultra-conservative optimist, who abhors operations, is never willing to admit the intractability of a discharge and is content to go on treating, syringing, scraping and powdering an ear for years, to the surgeon who considers a discharge chronic intractable after it has existed a month or six weeks and then advises immediate operation. The writer recognized the fact that it is quite impossible to lay down any hard-and-fast rules as to the length of time an aural discharge may be allowed to continue unmolested by surgical intervention. Speaking in a general way, however, he believes that when an ear has discharged for about six months, during which time faithful and proper treatment has been carried on, the surgeon may justly consider that the time has arrived for proposing some sort of operative intervention. The writer desires to say, however, that, of course, he would

not consider it advisable to await such a period in case the discharge was of a streptococcus character, or if reasonably well-defined symptoms occurred pointing to serious intramastoid or intracranial complications, as the latter conditions would naturally demand immediate operative advice, and an unabating streptococcus discharge should not be allowed to continue for long without an opening of the mastoid cells. In suggesting a six months' probationary period the writer is guided by his own and others' experiences to the belief that if a discharge can not be eliminated in about that length of time it is generally useless to look for a cure by non-operative methods. Such discharges generally persist because the disease has passed backward into the mastoid antrum, which is, of course, a true anatomic and physiologic portion of the middle ear proper, and can not possibly be otherwise considered. In the event of such progression it is manifestly illogical to expect curative results when the remedial procedures and remedies do not at all reach the remote seat of pathologic lesion. Of what use is it, then, to go on cleansing such tympani, either by dry or wet processes, to continue the use of tympanic curettage and powder insufflations, when the moment the middle ear is thoroughly cleansed a continuous outpouring of fresh discharge from the antrum nullifies all the well-intentioned efforts of the surgeon? Is it not more logical to endeavor to regard necrosis in this location in the same light as necrosis is regarded in all other portions of the body by the general surgeon, and to seek its removal by rational procedures? This reasoning is strengthened by the peculiarly important structures adjacent to the seat of disease, making necrosis in this location a condition of exceptional gravity, even though concealed and difficult of access. It may be said that operative advice is particularly applicable in case tuberculosis or syphilis is present, if the discharge continues excessively foul and is mixed with cheesy, mother-of-pearl-colored or cholesteatomatous flakes, if granulations persist and are accompanied with posterior and superior caries of the tympanum, if the discharge is of a streptococcus character, if mastoid or brain symptoms are present, if the drum-head opening is insufficient for drainage and is located in the upper portion of the membrane, and if there is reddened sagging of the upper, posterior and inner portions of the auditory meatus. The perpetual cleansing, scraping and powdering method of dealing with chronic purulent otorrhea still in vogue with some aurists reminds one very forcibly of the gynecology of the "good old days," when the gynecologist's waiting room was lined with an expectant crowd of women waiting for their turn to have one of the magical mixtures of iodin, glycerin, tannin, silver or what-not applied to the interior of their uteri. In the light of our present-day knowledge we know that these never ending "treatments" fell far short of arriving at the cause of the trouble; they merely directed their energies at the effect, at the discharge or the inflammation, etc. The real origin of the disease lay within the pelvis, where it is reached and cured today by operation by the modern surgeon. In case an apparently uncomplicated and intractable chronic purulent otorrhea has existed for about six months, in spite of competent and persistent treatment, the writer is willing to admit that an ossiculectomy and tympanic curettage may, perhaps, be advised as the next step toward a cure, although good results can only be reasonably expected in those few cases where the sites of necrotic and other pathologic changes have absolutely restricted themselves to the confines of the tympanic cavity. This admission is conceded in the face of the fact that only a small minority of such operations are successful, and that brain complications and facial palsy sometimes follow the operation. The writer believes, however, that this procedure, followed by faithful treatment for a few weeks, will, by the removal of pathologic products from the middle ear and the production of improved drainage, cure a few of these cases, and he believes that patients may properly be given the benefit of this possibility, unless intramastoid disease is evident, before resorting to more serious, dangerous and expensive operative methods. The failure of this procedure, after a reasonable length of time, opens the way to the emphatic and conscientious advice for the performance of the radical mastoid operation, the chief objection to which is the production of facial paralysis (an accident which should seldom, if ever, occur after the operation of acute mastoid abscess), and this is a menace of no mean

caliber and one from which the average operator may well shrink. It is a most distressing sight for a surgeon to see a face pulled to one side after anesthetic unconsciousness has passed away, and to realize that this is the work of his own hands. If this disheartening appearance is shocking in an obscure hospital patient with few or no friends, and little or no influence, what must it be to witness such an occurrence amid wealthy and influential surroundings, where the bad tidings will spread like wildfire, to the undoubted detriment of the operator's reputation? It may be said, however, for the encouragement of operators who are doing this character of work, that these cases almost invariably recover in a few weeks or months, and those cases which do not recover may often be successfully operated by the attachment of the facial nerve to the hypoglossal or spinal accessory nerves, as recommended and successfully practiced by Ballance and others.

The facial nerve may be injured in any portion of its course, from its entrance into the middle ear at the upper middle portion of the tympanic wall to its exit from the skull at the stylomastoid foramen. Contrary to popular belief, the facial nerve always remains within the confines of the petrous portion of the temporal bone and does not enter the mastoid protuberance at all. On chiseling away the mastoid cells the hard petrous covering of the nerve may be clearly seen at the anterior portion of the cell structure, just back of the bony meatus and below the floor of the antrum, and should be carefully avoided, although considerable protection is afforded by its sclerotic casing. The shell of bone protecting the nerve as it passes through the tympanum is, on the contrary, very thin, and sometimes entirely absent in spaces, thus accounting for the occurrence of facial paralysis during middle-ear suppurations. Most cases of facial paralysis following mastoid operations are due not to injury of the nerve after it leaves the tympanum on its way to the stylomastoid foramen, where it is protected by its petrous covering, but to the breaking of the walls of the tympanic Fallopian canal by probing, chiseling or curetting, an accident which may occur to the most painstaking operator, especially where openings of the canal, either of a necrotic or congenital nature, are present. Indeed, facial paralysis is said to occur from the mere jarring of the nerve during chiseling proceedings, an opinion which argues in favor of gentle manipulations, a soft head cushion and more familiarity with reliable rongeurs and curettes instead of the chisel for the bone work. Another place at which the facial nerve may be injured by careless or thoughtless operating is near the tip of the mastoid bone, as the nerve passes down through the stylomastoid foramen into the soft tissues of the neck. Some operators are overbold, as they use the strong curved scissors in cutting away the sternocleidomastoid and other attachments to facilitate the free opening of the tip cells later on in the operation. They may, unless careful, carry the curved scissors too far beneath the mastoid apex and sever the tissues of the cervical portion of the facial nerve.

Another danger to be avoided during the radical mastoid operation is the infliction of an injury to the horizontal semi-circular canal. At the extreme upper and posterior portion of the inner wall of the tympanum, between the facial nerve and foramen ovale anteriorly, and the mastoid antrum posteriorly, can be seen the hard, bony convexity covering the horizontal semi-circular canal, usually easily recognized as a yellowish prominence in the inner tympanic wall. Being situated just at the floor of the angle, where the antrum merges into the aditus ad antrum, injury to this portion of the internal ear may be easily inflicted by a blow of the chisel, especially after the superior posterior wall of the bony meatus has been cut away in the performance of the radical operation. Nevertheless, it would seem that this accident rarely occurs, as not many instances of disturbances of equilibrium and dizziness are recorded after such surgical procedures, symptoms which assuredly would be expected after injury to these centers of equilibrium, and symptoms which, fortunately, as a rule pass away in a few days. A partial explanation of the infrequency of injury to the facial nerve on its downward course, and of a similar infrequency of injury to the horizontal semi-circular canal during the radical operation, resides not only in their hard and compact coverings, which protect them from accidents, and to the eye of the operator distinguishes them from their bony surroundings, but also in the fact that they lie

below the plane of proper chiseling procedures, as in cutting away the posterior meatal wall, while the initial opening should be wide the receding space should gradually diminish in size as the inner wall of the tympanum is approached. Thus the space produced should be triangular in shape, with the apex at the inner wall of the tympanum and the base at the opening of the bony meatus. By thus carefully chiseling, both the descending portion of the facial nerve and the convexity of the horizontal semi-circular canal will lie outside the lines of incision and escape injury. Both these vulnerable anatomic points may, perhaps, be avoided by the use of the Stacke protector as the last few pieces of bone are removed to make the triangular space or opening necessary for the careful inspection and treatment of the middle ear, antrum, etc. The protector may also be used in chipping away the ledge of bone separating the attic from the meatus, without which procedure a perfect cure is highly improbable. It should not be forgotten, however, that the introduction and retention of the footplate of the protector may in itself injure the facial nerve and semi-circular canal unless carefully introduced and used, and that the same thing may occur from undue force in malleting the chisel onto the footplate of the protector through an undue sense of security. Owing to these and other objections, the protector is not used as much as formerly, reliance being placed on better surgical knowledge and technic and intense and constant illumination of the operative field. The writer has derived much satisfaction from the use of the instrument which he submits for your examination, to break down the meatal wall and protect the facial nerve, semi-circular canal, etc., from damage. The footplate of the instrument is carefully inserted through the antrum (after it has been freely opened) into the middle ear, and the crusher is applied to the external edge of the meatus, being careful to lift the footplate from the inner tympanic wall to prevent accidents. A portion of the posterior meatal wall should be chiseled away before this instrument is applied, as the bone is too thick and strong to be safely broken unless previously weakened by a few strokes of the chisel and mallet. After the wall is thus ruptured clear through to the middle ear, and the pathway distinctly outlined, the rest of the operation can be completed with much greater safety and facility. The wounding of the sigmoid portion of the lateral sinus is undoubtedly one of the dangers of the radical mastoid operation, although the writer believes that this danger has been very much overestimated, both as to its probability and also as to the damage accomplished by such an accident. The knee of the sinus usually lies about one inch back of the posterior wall of the meatus, except in children and people of small heads, when its proximity is nearer. It may lie further backward or further forward, even to the extent of impinging close upon the meatal wall and absolutely preventing the performance of the classical mastoid operation. Vascular connections exist between the sinus and the cells, thus affording at least one explanation as to the frequency of sinus infections. The outer osseous covering of the sinus is easily broken and care should be exercised to prevent this accident during operative procedures, still no especial anxiety need be felt if this occurs, although the subsequent operative steps are always thereby somewhat embarrassed, through constant vigilance, lest the dural covering be also ruptured. Even, however, should this occur, the prompt use of tampons will almost always control the hemorrhage, and the danger of infection is not great. The writer believes that the danger is not so much in damaging the sigmoid sinus as in the improper handling of cases where phlebitis and thrombosis are discovered, and as these conditions are generally to be found (if found at all) in cases of acute or subacute mastoiditis, or in acute exacerbations of chronic mastoiditis and otorrhea, where the operation is clearly indicated as a life-saving measure, it need not be considered at the present time.

Another danger in the radical mastoid operation is the possibility of exposing the dural covering of the temporosphenoidal lobe or the cerebellar lobe of the brain, and here it may also be said that in the opinion of the writer this danger has been much overestimated, and that but little anxiety need be entertained with good operators even if such accidents occur. There is, of course, some danger in opening up an avenue of infection through the foramen ovale, in case of the accidental removal of the stapes during the extraction of the malleus and incus, or

in middle-ear curettement, or in entering the carotid artery in front and beneath the middle ear, or the jugular fossa directly underneath the tympanum, by too vigorous operative measures, but these accidents, especially the two latter, are of extremely improbable occurrence and should not enter into our calculations in estimating the advisability of an operation. While, therefore, meningitis and other intracranial complications, and accidents to the facial nerve, horizontal semicircular canal, sigmoid sinus, etc., may result from the performance of the radical mastoid operation, the only occurrence that seems to the writer to sustain much weight is the embarrassing and unfortunate occurrence of facial paralysis. This is surely a valid objection and one that demands consideration, but the only suggestion that can be offered by the writer is not to neglect or abandon this truly admirable operation, but to perfect our skill, knowledge, precautions and surgical technic so that this and other accidents and misfortunes will not occur. So far as danger to life is concerned in a properly executed radical operation for the cure of chronic purulent otorrhea, when no dangerous symptoms are present, the writer believes that such an occurrence, while, of course, possible, is extremely improbable and has never seen it in his own practice.

Another objection to the operation is the fact that the ultimate result is not always successful as to the cessation of the discharge. Such results, after passing through the dangers of the operation, the protracted healing and the considerable expense, are not reassuring, and naturally discourages both the operator and the patient. Unsatisfactory issues of this nature are, however, in the opinion of the writer, practically always unnecessary and due to improper and insufficient operative procedures, such as lack of care in the extermination of every particle of necrosed bone, the non-use of plastic or skin-grafting operations, or insufficient curettement of the Eustachian tube opening, which should be thoroughly scraped, cleansed and, if possible, sealed, as its office after this operation is lost and its orificial patency only serves to perpetuate a discharge. The failure to remove the upper ledge of bone between the meatus and tympanic attic is also frequently the cause of imperfect healing, as when operative measures cease the upper meatal wall should be perfectly continuous with the upper attic wall, or the tegmen tympani, so that a bent probe touching the tegmen tympani can be pulled (still touching the bone) completely out of the meatus without meeting any bony obstruction. Unless this most important step is taken and the attic destroyed as a separate entity, the diseased territory can not be perfectly curetted, cleansed and treated, and will always remain a focus of disease.

Another objection which is frequently raised is the possible bad effect upon hearing. While this result, with a properly executed operation, is a possibility, the writer believes its magnitude has been very greatly overestimated and that a vast majority of cases will either emerge from the operation with uninjured or improved hearing. We have long since passed the time when the drumhead and ossicles can be regarded as essential to hearing. No doubt when in a reasonably healthy condition they are a great assistance to the best hearing, but the writer believes that many people could hear much better without drumhead or ossicles. For instance, the writer believes that a perforated drumhead, embarrassed by tympanic adhesions and accompanied by necrosed and retracted ossicles, surrounded by fungating granulation tissue, so far from assisting hearing, actually impedes the transmission of sound waves to the labyrinth, and that the hearing of the individual will, in all probability, be improved by a removal of this obstructing pathologic mass. Such are the conditions usually found to a greater or less extent in cases of chronic purulent otorrhea, and form the basis for the cheerful prognosis of fair hearing capacity after the operation, and the results in the writer's cases and in the cases of most other surgeons fully corroborate the foregoing statements. When surgeons drained the wound, both through the meatus and the unsutured mastoid opening, a forceful objection to the operation could be found in the extremely protracted healing, and in the resulting deformity, consisting in an unsightly meatal opening, a lowered and protruding auricle, a disgusting postauricular scar and often in a large and permanent mastoid aperture. As the operation is at present performed, however, the mastoid wound is entirely

sutured at the time of operation, thus preventing a postauricular opening, and, by holding the parts up and in place, dispensing with the malposed auricle. A properly made Panse, Körner, Ballance or other meatal flap does not deform the meatal opening and assists greatly in the rapid lining of the operative cavity with new skin, and when this is combined with the grafting of skin sections to the exposed bone, as recommended by Ballance, Dench and others, little is left to be desired tending toward a perfect and satisfactory result. Patients can usually leave the hospital in about two weeks, and a thorough cure is generally effected in from eight to ten weeks.

From the foregoing answers to some of the important objections to the radical mastoid operation it will be seen that a great and favorable evolution of improved operative technic has taken place through the last few years and that the operation is gradually losing its terrors and disadvantages, and that continuous, honest surgical work and investigation will soon quiet our fears by placing this operation in such a position of safety and assurance that its performance can not be avoided by those pretending to do the best and most advanced aural surgery. The foregoing portion of this paper has been devoted largely to a recitation of the operative indications, the principal objections to the radical mastoid operation, an attempt at answering these objections and a few words of inspiration toward future work and investigation. I can not leave the subject, however, without briefly reminding my hearers that purulent tympanic infections are responsible for about one-half of the brain abscesses of the world and that in the United States alone 4,000 otitic brain abscesses occur annually, that chronic purulent otorrhea is responsible for most of these and that death from this cause occurs in about one to every thousand ear cases of all kinds that come under treatment. With an array of figures like these we must inevitably recognize the importance of the subject, and we can not and should not seek to evade surgical responsibility if chronic purulent otorrhea is producing this significant mortality. Hundreds of cases of chronic purulent otorrhea present themselves to us to be cured. Shall we be satisfied, with these statistics before us, with eternally, month after month and year after year, cleansing, drying, powdering, scraping these middle ears, when we must know that the real seat of the disease can, as a rule, never be even touched except by the radical operation? Shall we shirk operative responsibility or enhanced labor? Or shall we not rather by study, investigation and operative experience so perfect our knowledge, precautions and operative technic that this great surgical procedure may be performed with practically no danger to life and but little danger to function, thus enabling us to perform our legitimate part in lessening the world's mortality? These questions must be settled by each of us according to our personal equations.

DISCUSSION.

Dr. William Ballenger, in discussing Dr. Allport's paper, laid down the following axioms on mastoid disease: 1. Acute infection of the mastoid cells is serious in proportion to virulence of the micro-organism causing it. 2. Chronic infection of the mastoid cells is serious in proportion to virulence of the original (acute) microbic disease that lapsed into the chronic form. Hence chronic infections of scarlatinal and influenzal origin are more grave than those of less virulent origin. 3. A marginal perforation of the drumhead is of more serious import than a central perforation. 4. A marginal perforation usually signifies bone necrosis in the parts near the perforation. 5. The anatomic parts in proximity to the postsuperior margin of the drumhead are the incus, the antrum, facial nerve, horizontal semi-circular canal and the middle fossa of the skull. 6. Hence a perforation is serious in proportion to its proximity to the postsuperior portion of the margin of the drumhead. 7. The anatomic parts in close proximity to the superior margin (Schrapnell's membrane) of the drumhead are the malleus, root of the attic and the meninges and brain resting upon it. 8. Hence a perforation in the superior margin of the drumhead signifies probable necrosis of the malleus and roof of the attic, with an impending meningitis or cerebral abscess. 9. The anatomic parts in close proximiity to the inferior margin of the drumhead are the thick bony wall of the floor of the middle ear, and in rare cases when the floor is

thin the jugular bulb. 10. A perforation in the inferior margin of the drumhead is, therefore, of comparatively little gravity, except in those rare cases in which the jugular bulb is separated from the floor by only a thin bony partition. 11. A central perforation in the anterosuperior quadrant of the drumhead signifies an infection of the Eustachian tube. A mastoid operation in a case with the perforation at this point should include the appropriate treatment of the infective salpingitis. 12. The indications for the radical mastoid operation in chronic infections of the mastoid cells are urgent in proportion to the marginal location of the perforation (especially in the postsuperior region), the virulence of the original infection, the presence of necrotic bones and in the secretions and the history of recurrent acute exacerbations. 13. It goes without saying that intracranial complications of otitic origin are imperative indications for the radical operation. 14. The study of a given case with chronic ear discharge by the standard of the foregoing axiomatic statements should lead us to a correct conclusion as to the necessity for the radical mastoid operation.

Dr. Norval H. Pierce:—Mr. President, Dr. Allport has made a worthy attempt to clear up the most important question in this very important subject, namely, the indications for the performance of the radical operation. We might say that he has gone over the same old ground that has been threshed over and over again without adding very much more to our knowledge, but this is because he can not transcend human knowledge. It is exceedingly difficult in any given case of chronic otorrhea, where there are no other symptoms besides a discharge from the ear, to say whether that ear is a menace to the patient's life or not. I might say that it is impossible to foretell without the actual symptoms of sepsis, or meningeal irritation or of some other obvious symptom whether or not the disease within the mastoid bone is progressing toward one or the other of the vital parts which surround the tympanic cavity. Therefore I have come to the conclusion that the only indication for the radical operation is a running ear which resists all conservative measures, and that is about as far as we have gotten at the present time. But, to go back, I notice that Dr. Allport has apparently indulged in a very common misapprehension regarding the Stacke operation. The Stacke operation was devised by the gentleman after whom it was named for two principal purposes: 1, an exploratory purpose, and, 2, for the purpose of obviating the danger of wounding the sigmoid sinus when it lies very far anterior or very close to the external auditory canal. It is also used in cases where, after penetrating the bone from the surface to a certain distance, the antrum, on account of its malposition or for some other reason, is not found, and then the Stacke operation is performed. The Stacke operation is performed in the following manner: The usual incision is made posteriorly, the external auditory canal is removed, and then by means of Stacke's chisel, which is a curved chisel, the walls of the aditus ad antrum and the walls of the epitympanic space are removed, after examining the contents of the middle ear and finding whether there is necrosis of the ossicles or not. If the ossicles are necrosed they are removed and a probe is pushed up into the aditus ad antrum and into the antrum to find whether there is a large space there surrounded by necrotic bone. If this is true, the opening at the depth of the canal is increased in size, and if it is found that drainage can be accomplished by taking away the end of the bony canal the moveable or cartilaginous portion of the external canal is replaced, the posterior auricular incision is sutured and the operation is completed. That is the typical Stacke operation. The Schwartze operation, however, goes in from the exterior of the bone and endeavors to arrive at the antrum from the exterior, and in this way the antrum, the mastoid cells if they are found necrotic, the epitympanic space, the tympanic cavity and the external auditory canal are converted into one great cavity. In going in from the surface the Stacke procedure is used when we suddenly come upon an unexpected sigmoid sinus which lies close to the external bony canal, or where we are unable to find the antrum by way of the external opening. I find this misapprehension is very common, and I mention it simply to bring the matter before Dr. Allport in his closing remarks. As regards the pathology of chronic suppuration, Dr. Allport mentions a chronic streptococcus suppuration as a cause of a chronic ear trouble.

I believe that there is no such a thing as a chronic suppurative inflammation due, *per se*, to the streptococcus. Nearly all of these inflammations are due to necrosis or caries or to cholesteatoma, which in turn is largely due to the retention of fatty masses derived from epithelioma within the catchbasin produced by the original necrosis within the mastoid cells. If we can by corrective treatment destroy these cholesteatomatous masses and provide drainage, ventilation, we will in all probability effect a cure just as we would bring about a cure by our radical methods.

Now we come to the question that is most important, and that is, which cases that have not the symptoms I have named, which point to the extension of the disease to the brain, to the sigmoid sinus or to necrosis of the semi-circular canals or cochlea signs of retention (pain), etc., can we say must be operated, and which are the cases in which we may allow suppuration to go along? I am free to confess that I find this a most difficult matter to determine. I have seen cases, ten, twelve, eighteen years ago, that had perforations in Schrapnell's membrane, with little shreds of cholesteatoma coming out and discharge taking place, which to-day are as healthy as they were at the time I saw them first. On the other hand I have seen cases where there has been little or no discharge, where there has been great loss of the tympanic membrane going on for years, and then suddenly a chill, a high fever, followed by death from septic thrombosis of the sigmoid sinus. These represent the two pictures of the extreme cases. In between there are various shades of cases. The only thing we can say is, if we wish to be on the safe side, the best advice to our patients with suppurative ears that resist all our conservative efforts to heal them (under this head I comprise all intratympanic manipulations and operations), to submit to the radical operation. I think that is just the whole thing in a nutshell. Facial paralysis is the greatest bugbear in this matter, perhaps because it affects most the surgeon. The cases in which we wound the meninges and the patients die of meningitis, or where we perforate the sigmoid sinus and the patient dies of sepsis, affect us very little, as a matter of fact. These things happen in the natural course of events and the patients are passed on to their fathers and little is thought of them. But when a patient comes into our office day after day with that awful facial expression and goes around to his neighbors and they ask, "Who did it?" "Dr. ——!" it is a terrible thing, really, and therefore I agree with Dr. Allport when he said that facial paralysis is a great hindrance to the universal employment of this radical operation. I differ from the essayist, however, in that I believe facial paralysis, which may exist for months, may occur not from cutting the nerve, but from a concussion of the nerve. I am convinced of this. I have seen patients who had facial paralysis and in whose cases I am positive the nerve was not cut nor the canalis Fallopii fractured. They get well—most of them. As I said the other evening, when there is a permanent facial paralysis I believe we are placing too much reliance on our ability to reestablish facial movement by suturing the facial nerve to any other nerve. I have seen some of this work done in New York, and it has been disappointing. It is a great mistake to attempt these operations within a year or two after the occurrence of such facial paralysis. I have recently seen a patient on whom I operated something like six years ago, the operation having been followed by a complete facial paralysis, and which remained so for three or four years afterward, and at that time I advised the suturing of the nerve to some other nerve. The other day that patient, a child, at puberty, came into my office, and to my great surprise she had lost the distortion of the face which she had and there was some movement of the paralyzed muscles. How that has come about I am not prepared to say, but, nevertheless, the fact remains.

Dr. Henry Gradle:—The so-called radical operation represents, no doubt, the greatest advance in otology in the last fifteen or eighteen years. There are annually thousands of lives saved by it, but it is a grave and formidable operation and one that requires a great deal of technical skill in its performance. It is an operation not free from danger. I do not refer merely to the wounding of the facial nerve, or the semi-circular canal, but to the danger to life. Statistics of mortality of this operation vary some; it is in the vicinity of 4 to 8 per cent. It is true this mortality is not so much from the operation as from the disease, be-

cause cases are operated too late. But even in the hands of expert operators there is some mortality, hence we should strictly lay down the proper indications for it and not do it unnecessarily. When a patient with chronic otorrhea of recent or long standing comes with a history of an acute or subacute exacerbation, with one-sided headache, with local tenderness, with no symptoms of meningeal or cerebral irritation, there is no question but that it is a case for immediate operation. The disease in such an instance is progressive and dangerous. But in the absence of such urgent symptoms the operation should not be undertaken without critical trial of conservative treatment. After many years' experience I have learned to recognize the persistence of the odor of the discharge as a very valuable guide regarding the necessity for the operation. How long the disease has existed is by itself of no importance. When we remove the secretion by thorough syringing and then blow into the ear a light puff of boric acid we will suppress the odor completely in one or at most two or three sittings in a fair proportion of cases. These cases generally get well rapidly in the course of a few days or few weeks under the persistence of this treatment, so that an operation is entirely unnecessary and should not be considered. It is true, we do not get them all well so fast. In a small proportion of these cases the discharge may persist very long, but without the least evidence of danger. These cases are evidently due to disease in the neighborhood of the Eustachian end of the tympanic cavity; they are not due to any bone lesion, and, while a small proportion of them do not get cured rapidly, they all get well in the end and are certainly of the harmless variety. When we can remove the odor by one to three irrigations, followed by boric acid, operation is out of the question. When we can not remove the odor by this treatment, promptly, its continuance proves useless, no matter whether it is kept up for a few days or weeks. There are lesions present which cause a damming up of pus and retention, and these are the dangerous cases. By various other means we can often render the source of suppuration more accessible even in this relatively intractable class of cases and thus avoid operation in a large proportion of them. By the use of intratympanic tubes we can occasionally remove grumous thickened pus and immediately stop the fetid odor. While we do not succeed often in doing this, we succeed often enough to make it worthy of trial. Sometimes by using ether and alcohol poured into the ear, followed by carbolated glycerin, we may also succeed and be rewarded by a cessation of the odor. If these methods fail, the treatment introduced by Dr. Pierce has in my hands proven satisfactory, namely, thorough tamponing with absorbent gauze, by putting the gauze into the middle ear itself and replacing it at short intervals. In this way a certain proportion of these cases are thoroughly and permanently cured. Gauze drainage does not remove the odor at once or promptly. It stops the secretion gradually, and when the secretion is gone there is no odor left. But the last drop of pus on the gauze may still smell offensively. If the gauze-drainage method proves of no influence upon the amount of discharge after two or three weeks of trial, the case can not be cured except by operation. If you find a decided improvement you may continue its application and you will find one of two results: either in the course of five or six, rarely more than seven, weeks the discharge has disappeared entirely, there is no odor left after the gauze has been taken out dry one or two consecutive times, and the patient is cured, or we get just so far, we can remove the odor, reduce the discharge to a mere trace. Of the cases cured by gauze drainage, a fair proportion stays cured. But the number of relapses is much larger than in the class in which the odor is speedily stopped by irrigation and boric acid. But even a radical operation is no absolute guarantee against a relapse. Only such relapses are not dangerous to life after thorough operation. The really difficult decision whether to operate or not is in those instances in which gauze drainage removes the odor but does not dry up the discharge completely. Whether such a patient is in greater danger from his persisting disease or from the operation depends on his willingness to take care of himself and circumstances and surroundings.

Dr. Thomas J. Gallaher, of Denver, Colo.:—I did not expect to be called upon to take part in this discussion. I would say in regard to operating upon a given case of chronic otorrhea, I would perform the radical mastoid operation when I

had exhausted every other known means. Many cases of limited destruction of the tympanum and attic, and including the ossicles, will respond to careful treatment when the radical operation seems to be the only procedure which offers relief. Such treatment includes thorough cleansing of the parts, drainage, use of stimulating powders, removal of granulations and cholesteatomatous cases, and even ossiculectomy itself. If after such care we fail to decidedly improve the discharge after many months' or a year's treatment, the radical operation must be seriously considered. In deciding for or against the operation, proper attention must be given the social position of the patient and whether one or both ears are involved. We should not hesitate to perform the radical operation if the patient has one sound ear. Flushing of the middle ear, as ordinarily done, does not thoroughly clean the attic, and it is necessary to use the attic syringe. The Schwartze-Stacke operation is, in this country, taking more and more the place of ossiculectomy, as in the vast majority of cases the aditus is involved. The operation as first described by Stacke, namely, entering the antrum through the posterior-superior meatal wall, is now seldom performed, owing to danger of injury to the facial nerve and dislocating the stapes, but the Schwartze-Stacke operation is more commonly done; that is, opening the antrum, proceeding through the aditus into the attic. I am pleased to know that Dr. Allport does not especially recommend the use of the guide in the aditus, lest it might do damage. Much harm is undoubtedly done in operating for acute mastoiditis by the indiscrete probing in the aditus, thereby dislocating the incus and stapes. I would have been glad to have heard more in regard to the after-treatment of these cases. Of course, with cholesteatomatous formation the posterior wound is kept open. There is very little liability to the drooping of the ear if the auricle is sutured to the temporal muscle. This enables us to inspect the cavity at all times and makes it easy to remove the cholesteatoma in case of its reforming. In addition the air keeps the parts dry, lessening the liability of its recurrence. It is a question whether skin grafting, after the formation of granulations upon the bone, materially assists in the epidermization of the cavity. The greatest care should be used in removing the posterio-superior portion of the annulus tympanicus, lest by too strong a blow upon the chisel the aqueductus Fallopii might be fractured, thereby injuring the facial nerve. In the radical operation the tympanic end of the Eustachian tube should be obliterated. This can be done by means of a curette, and some operators use a small hand burr placed upon right-angled handle. The burr should be very cautiously used, and just one or two turns made by the hand will be sufficient to enter the tube. This will insure the removal of diseased parts in the tube and its permanent closure. If the Eustachian tube is not thoroughly closed the middle ear is reinfected secondary to acute rhino-pharyngitis. The mere exposure of the sinus or the dura will do no harm if proper precautions are taken. However, it is a serious thing to penetrate the sinus or dura, lest infection might result. It is a source of congratulation among otologists that through one means or another many cases of chronic suppurative otitis media are now being cured which formerly continued a menace to the patient's life, as well as being a very great inconvenience to him.

Dr. Otto J. Stein:—This subject is of great interest to all who are particularly interested in otology, but as the hour is late I shall not attempt to discuss the topic. I will content myself with asking a question or two. I would like to ask Dr. Allport if he has found in his experience that we may have necrosis of the labyrinthine wall of the middle ear unassociated with any active process apparently elsewhere. In cases where we have had prolonged suppuration, chronic otorrhea, there may have been great destruction with spontaneous healing. Cases present themselves at times where there has been total destruction of the drum membrane and of the adjacent bony parts. There is a large cavity, so that one can look upward through the canal almost directly into the attic or antrum. If the outer wall of the attic has been necrosed, and healing has taken place, the parts may seem dry and thoroughly cicatrized, but at one or two places along the labyrinthine wall of the middle ear there is more or less necrosis. I would like to ask Dr. Allport if in his experience he considers this condition an indication for the radical mastoid operation.

Dr. Bayard Holmes:—The ear doctors appear to consider a running ear an indication for the mastoid operation, and that this should be done only after the discharge has continued so long as to destroy everything within the tympanic cavity. It had always appeared to me that the real object of eradicating the mastoid cells was the termination of a suppuration within these cells, and that it was not necessary to await any destructive process in the tympanum, the petrosa or the interior of the skull. Suppuration within the mastoid is an adequate indication for the removal of the mastoid, and from a practical standpoint it is the only reason. To admit that many cases of suppuration within the mastoid terminate spontaneously, or after wiping out the external auditory meatus, or syringing out the middle ear, or irrigating out the antrum through the middle ear, is no contraindication to the prompt removal of a suppurating mastoid. In a family of eight I have seen twelve suppurating ears. Such a concourse of pathology as this would require extensive and even embarrassing operations to carry out these indications. Nevertheless I believe that the only safety of the patients and their only chance of health lies in the complete eradication of the suppurating cells. One of the greatest impediments to radical and prompt treatment is the fear of injuring the facial nerve. I have had occasion recently to study the literature upon this point, and I find that operators are extremely silent upon the subject. I have found more cases reported where the injury of the nerve occurred spontaneously in the course of the disease, and more cases reported where nerve grafting had been undertaken for facial paralysis, than cases of injury of the nerve after mastoidectomy altogether. I urge every operator to report every case of facial paralysis, with every detail of its occurrence and duration.

Dr. Joseph C. Beck:—Dr. Stein stole my thunder with reference to a point in connection with this subject, namely, the labyrinthine involvement, the indication for mastoid operation where labyrinthine symptoms are present or are associated with chronic suppuration. In my experience in this line of work I follow very closely the indications for the radical operation laid down by Dr. Allport and others here this evening. I have found cases in which there were distinct labyrinthine symptoms and have done a thorough and radical operation, as described this evening. The suppuration would cease, the whole cavity become epidermized and the patient was quite satisfied, except in regard to one thing, namely, marked dizziness, to which reference has been made this evening, and which is undoubtedly due to the wounding of the semi-circular canal. But this dizziness does and should ordinarily disappear in a short time. In these two cases where there was labyrinthine involvement following the operation, the dizziness was of much longer duration than has been stated to-night. In one of the cases it is now almost two years since the operation was done, and in this there were not only disagreeable labyrinthine symptoms, dizziness, etc., but the patient has been unable to sleep in the recumbent position. The patient sleeps sitting up, and this is largely because of the marked dizziness and ringing in the ear when lying down. On careful examination of this case I found in the region of the semi-circular canal a small granulation, with no discharge. This is contrary to the rule in surgery where we have granulation tissue to have some necrosis. But there is no discharge here, and when I touch that point distinct symptoms of labyrinthine irritation is produced. I would like to ask Dr. Allport what he would do in such a case in a surgical way. This point of granulation has been cauterized and every effort made to have it heal up, but this, together with internal medication, has been of no avail.

Another point I wish to speak of is with reference to suture of the facial nerve. Dr. Pierce alluded to a case I presented to this society of tumor of the middle ear where I either severed the nerve or the tumor did so. It is a question whether I injured or destroyed the nerve in removing this endothelioma from the middle ear. I believe that suturing of the facial nerve in this case is indicated, and I propose to do it some time soon. But Dr. Pierce stated the other evening that we should wait, and to-night he mentioned a case where there has been repair of the facial nerve after four years or longer. It seems to me we had there a contraction of the facial muscles or some remarkable reparative process of the facial nerve has taken place. Ballance and Stewart tell us that we should not wait long in these cases

because of the atrophy of the muscles, and possibly Dr. Allport in his closing remarks will say something about suturing the facial nerve.

Dr. F. C. Hotz:—The radical operation on the mastoid is well established as a legitimate one and does not need any defense. However, it is a formidable operation and ought not to be undertaken unless we feel justified in performing it. There is not so much difference of opinion in regard to the technic of the operation, nor as to its being a dangerous operation under certain conditions, but the diversity of opinion comes as to the indications. As has been stated to-night, if the paper had been confined to a thorough discussion of the indications ,so that we could draw the line when and when not to operate, it would have been better rather than to have covered the whole subject, as the author of this paper did. There is one group of cases in which the operation is unquestionably indicated, and in which, I dare say, there is not an aural surgeon deserving the name who would not operate. Dr. Allport has given us a pen picture, beautifully drawn, of a chronic suppurating ear, with symptoms of involvement of the mastoid, and then said, "Why is it reasonable to continue treating, scraping and flushing the tympanic cavity when there is pus retention in the mastoid?" Well, it was not necessary to set up a straw man and knock him down. No aurist will do that. We all agree that this group of cases calls for this operation. A difference of opinion comes when we have to deal with a large number of chronic suppurative ears which show no manifest symptoms indicating involvement of the mastoid. Dr. Holmes justly said that the indication for the radical operation is to remove the pus and diseased tissue from the antrum, certainly not from the tympanic cavity. But how can we tell for certain there is pus in the mastoid in the absence of all symptoms? There is the difficulty. It has been said that if in the treatment the ear discharge continues offensive, the offensive odor points to the retention of secretions, which decomposes somewhere in the middle-ear structure at a point beyond that which is being treated or beyond the tympanic cavity. It was also laid down as an indication that if a case does not improve and the discharge is not controlled under proper treatment in from three to six months, the cause for the continuation of the disease lies beyond the tympanic cavity. I suppose, of course, every aurist considers his treatment proper treatment, or he would not use it. But what is this treatment as a rule? A patient comes to a doctor, is examined, and he gets something to drop into the ear. He is told to syringe the ear every morning and evening and to report to the doctor in a week. Such treatment does little or no good. It is practically no treatment in a case of chronic suppuration of the ear. I regard that treatment as only proper which the aurist himself gives. I am convinced that if the aurist himself treats these ears, and does not leave the work to be done by the patients themselves, a great deal can be accomplished which otherwise would not be accomplished. I believe that many of the cases could be cured without any operation. Because the discharge continues, in spite of flushings and powderings, etc., it does not mean that the antrum is involved. I have seen cases in which the discharge was kept up by polypoid growths which could not be seen through the perforation; they were hidden in the attic or at the floor of the tympanic cavity. I have seen cases in which the attic was full of inspissated matter; the syringe had been used for months and months, and no amount of syringing would bring it out. But after the proper use of instruments which will go into the nooks and corners of the tympanic cavity, searching for the granulations and treating them directly, in many cases the discharges have been stopped without the necssity of performing the radical operation. The point I desire to emphasize, then, is this: that proper treatment can only be carried out by the surgeon himself, and if he fails in a short time by conservative treatment he is justified in considering the performance of the radical operation, and to come to this decision I do not need three to six months, but three to six weeks are sufficient.

Dr. Allport (closing the discussion):—The hour is late and it is quite impossible for me to answer all the remarks and questions that have been propounded. Besides this, I feel that I have not the ability to answer them properly, and, therefore, will satisfy myself with the addition of a few remarks prefatory to adjournment. I wish, however, first to express my extreme gratification that my

paper, or, rather, the subject of my paper, has aroused so much discussion. It certainly shows the widespread interest in the radical mastoid operation and a sincere desire to arrive at the correct status of the procedure. Some of my neighbors have frankly expressed themselves as disagreeing with me in some of my views, but as I understand it this is the best part of a medical discussion, and progress can only be made by the expression of free and honest opinions. I, therefore, desire to thank all the gentlemen who have taken part in the discussion and can only regret that some of them seem to feel that I should have confined myself more closely to the announced subject, viz., "The Indications for Operation."

Dr. Pierce and Dr. Hotz express themselves as disappointed that I did not throw more light on this particular phase of the subject. This is, perhaps, due to lack of knowledge on my part, and perhaps due to the absence of distinct rules of guidance. Of course, we all operate in mastoid affections, either acute or chronic, where evident danger signals are manifested. The question under discussion this evening is, when shall we operate in chronic otorrhea where no alarming intramastoid or intracranial symptoms are present? And here comes up the matter of personal equation and of personal experiences. While perfectly willing to admit that many people carry discharging ears for years and practically a lifetime and then finally die of old age, or something else, I do not consider this an argument at all, for while it is undoubtedly true, yet the records show an appalling list of fatal brain infections produced from apparently quiescent discharging ears. Shall we wait, then, until the chill, erratic temperature and impaired mentality indicate a sinus thrombosis, or until depressed temperature and pulse and sluggish cerebration point to a brain abscess? Personally, I say No! Let us rather, by wise and unfaltering surgery, eliminate this danger focus and deliver to our patients a reasonably safe assurance of prolonged existence. We can not see inside the temporal bone, and, therefore, can not watch the uncertain and treacherous progress of osseous necrosis. Therefore, why should we assume to be on even reasonably safe ground because decisive and urgently alarming symptoms are not yet manifested, symptoms which, when once in evidence, immediately precipitate an extremely grave prognosis? I, therefore, felt that in laying down certain rules for operative guidance, which I pretend to follow myself, I had quite reasonably covered the point of "indications for operation." If I may repeat these views they can, perhaps, be briefly expressed as follows: When a chronic purulent discharge has existed for, say, six months, and continues unchecked after about six months of faithful and intelligent treatment, the time has arrived for operative interference, as it is almost certain evidence that necrosis has extended beyond the confines of the middle ear into the antrum and perhaps the mastoid cells, situations absolutely beyond the reach of any kind of local treatment. I believe this to be a fair and reasonable statement and one that will be heartily endorsed by almost all aural surgeons of wide experience.

This naturally brings up the question of what may be considered good treatment, and while varying views have been expressed upon this subject this evening by Drs. Gradle, Pierce, Hotz and others, I think they are all essentially the same, and simply consist in an endeavor to keep the ear in a clean and aseptic condition. Dr. Pierce likes, among other things, the gauze packings, which I like myself, and feel obliged to him for. Dr. Hotz curettes the attic, etc., with spoons and cleans away the accumulated inspissated masses, a procedure which we all use when necessary. Dr. Gradle thoroughly cleanses the middle ear and insufflates boracic acid powder, which we have all used for many years. He also depends much, when prognosticating, upon the aural odor, which view I am growing to respect more and more, and so I might proceed if necessary, to express other perfectly proper and accepted views expressed by these and other gentlemen, as to the treatment of chronic purulent otorrhea; but this is manifestly unnecessary as they are all practically the same, and I am sure I can assert with perfect truth and freedom that there is not an aurist in this room this evening who is not perfectly capable of properly treating this disease. The only question is, when should this treatment, if unsuccessful, cease, and when should operative procedures begin? My own answer to this question must reside in the general state-

ment of my views enunciated a moment ago, from which my own personal experience, my reading and observation will not allow me to recede.

Dr. Stein has asked if I would suggest a radical operation in case necrosis was confined to the inner wall of the tympanum. In reply I would emphatically answer, No! If necrosis is confined to the middle ear proper I do not believe that the radical operation is necessary, as I think it is practically always curable by middle ear treatment of proper character, such as we all use, perhaps supplemented later, when necessary, by an ossiculectomy and curettage. I believe it to be quite difficult, however, in an old case of otorrhea to establish a diagnosis of tympanic necrosis, pure and simple, without antrum complications. I think this point can be best settled by time, and the clinical course of the disease under proper middle ear treatment. I think my paper must be worded very blindly to have given Dr. Pierce the idea that I do not comprehend the details of the Stacke operation. He evidently inferred that I believed the Stacke operation was accomplished without the orthodox incision back of the ear, as is always made in all kinds of mastoid operations. I, therefore, beg to correct this interpretation of my paper, if others in this room gathered the same erroneous impression. Dr. Holinger, I think, referred to the difficulty in thoroughly curetting the mouth of the Eustachian tube. I can hardly agree with him in this as it seems quite simple, after the parts have been thoroughly exposed and wiped after the radical operation has been performed and is nearly finished, to find the tube orifice and thoroughly eurette it. Granulation tissue will frequently be found, and Dr. Whiting of New York has lately devised a conical hand burr for the work which renders it quite easy and efficient. Many of these cases recover with an imperfectly closed membrane, which can, I suppose, by courtesy be called a reproduced drum membrane. In such cases if the Eustachian tube mouth is not sealed from adhesive inflammation produced by the curetting, etc., just referred to, there will frequently proceed from the ear a mucus discharge, especially during the period of a catarrhal cold, etc. Such mucus discharge, while undesirable and unpleasant to the patient, I do not regard as of any especial pathological importance, but it is to prevent it that an effort is made to seal up the mouth of the Eustachian tube.

I would be glad if you would look at this boy upon whom I have made a radical operation on both sides. The left ear was operated on six weeks ago and is, as you will see, entirely healed. The right ear was operated on four weeks ago and is nearly healed. I would like you to see and examine the boy, for you will see that he has practically no deformity either back of the ear or in either meatus, and that notwithstanding both ears have been operated upon, he has excellent hearing.

Again I thank you for the prolonged and interesting discussion.

A regular meeting was held Jan. 17, 1906, with the president, Dr. C. S. Bacon, in the chair. Dr. Gustav Kolischer read a paper entitled "The Modern Operation for Uterine Cancer." Discussed by Dr. E. Wyllys Andrews, who said:

The removal of the parametrium, as recommended by the writer, interests a general surgeon from the standpoint of rectal carcinoma, in which class of work we are now doing very much more radical abdominal or combined operations than we thought of doing when the Kraske was so much in favor. Lately in one case I removed at the same time, by a sort of Queen's operation, the parametrium and the uterus, attached to a carcinoma of the rectum, in one piece, with practically not a moment's additional time over ordinary rectal resection. It seems to me the technic we learn there is exactly in the line with the advanced work Dr. Kolischer has spoken of because, as one step of this extirpation, we have to tie first one and then the other internal iliac artery. That is exactly the "starvation" treatment which predisposes not only to a bloodless operation, but to the prevention of growth afterward. If any metastases tend to occur we find them easier than by the Kraske method. To make this ligation we also have, for a moment, to un-

cover both ureters; they lie so close to the little incision we make in the peritoneum to get at the artery we have to push them aside; we have to see them. Hence they can not be injured. It is exactly this point in forks of the vessels where we must search for glands; so that it seems to me the general surgeon and gynecologist are approaching a sort of common ground. In this one case in which I removed the uterus, incidentally, the broad ligaments scarcely needed any clamping or ligating because of the previous ligation. In the rectal cases we make a combined operation, because by it so many of these rectal carcinomas can be taken out and the sphincter saved; then we invert the patient, and if it be a woman we finish the operation as a vaginal one, or if a man by a sacral cut. Doubtless every word in which Dr. Kolischer so emphatically insists on more radical work in the uterine cancers is true, by common consent, and is as equally and positively true of rectoanal cancers.

The next order was a symposium on hernia, and papers were read as follows: "Methods of Suturing in Hernia Operations," by Dr. M. L. Harris. "Unusual Forms of Hernia—Interstitial Hernia," by Dr. A. E. Halstead. "Hernia in Children," by Dr. Frank X. Walls. These papers were discussed jointly. The discussion was opened by Dr. L. L. McArthur, and continued by Drs. E. Wyllys Andrews, Arthur Dean Bevan, A. J. Ochsner, Victor J. Baccus, Wm. Fuller, Gustav Kolischer, L. L. McArthur, and M. L. Harris.

DISCUSSION ON HERNIA.

Dr. E. Wyllys Andrews:—Historically speaking, we must give Bassini credit for having made an epoch in the surgery of hernia. At the same time it has interested me, in looking up the first Bassini paper in 1889, to notice that he himself speaks of his operation as a modification of that of Macewen's, giving the Scotch surgeon a great deal of credit. We must also remember that Henry O. Marcy, of Cambridge, in this country, claims to have been the first to do the type of operation that Bassini advocated. I have copies of his early papers, nearly twenty years before Bassini. Any one who visits Bassini's clinic will be interested in one thing, namely, that he emphasizes the fact that the upper ring is an orifice through the transversalis fascia; therefore all sutures that are introduced to repair that ring must be partly in this layer and hence posterior to the internal oblique muscle. They must, therefore, be behind the cord in part. Although the anterior operation is in vogue, most of those who have seen Bassini's work know that the vast majority of European clinicians are still using the posterior method. Even in Kocher's Berne clinic they do twice as many Bassini operations as they do Kocher's. Historically speaking again, I think it is true that the credit for doing the anterior operation is due to Ferguson, of Chicago. Whatever its real value, it ought to be called his operation. Ferguson called attention at one time to the anatomic peculiarities of attachment of the internal oblique muscle in front of the cord along Poupart's ligament in hernia cases. Dr. Ferguson tells me that he also puts one stitch behind the cord in addition to those in front. With the Harris wire suture an important point in its use which impressed me most was the admirable deep closure which we can make close up against the symphysis. One can not commend too much the feature of a close, smooth line that the wire makes from Gunbernat's ligament clear up against the ring without leaving a weak spot, which might result in a recurrence.

Dr. McArthur's comment on his living stitch or ligature interested me very much. He showed a specimen of it under the microscope two years ago. I have been able to see that this criss-cross stitch was made up of living connective tissue. We have a sort of artificial intercolumnar fiber placed across the suture line. Knowing it is of great value in cases of hernia, I should think it would be also valuable in other parts of the body, although I do not know that it has been so applied. We can not commend too much the remarks of Dr. Walls with reference to our ability to cure hernias in children, both umbilical and inguinal, without cutting. I have repeatedly offended practitioners who have sent cases to me by declining to operate on children with ruptures until trusses had been given a long trial. It is undoubtedly true that 95 per cent. of the cases of umbilical hernia in children, if proper treatment is applied to retain the hernia, will make spon-

taneous recoveries, and operation is not necessary. The yarn treatment is very good. We can also obtain trusses with celluloid or vulcanite covering, which will resist moisture and rust, so that the child can be bathed from time to time with them on. Otherwise in removing the support, while resting or as a result of coughing, the work of one or two months' retention may be lost by the hernial protrusion reappearing.

I believe, as one of the speakers said, that large direct hernias give rise to the most relapses. It is here that Bassini's method is disappointing, because the ring has a hard fibrous edge, which is not closed securely by his form of deep stitch. I never cared for the Wölfler everted flap of rectus sheath, although I did use it in the County Hospital last week on a very large recurrent hernia, where the usual anatomy was destroyed by former operations and failures. If anyone will try my umbrication he will find that it takes the place of all other flap methods in the largest rings.

Dr. A. J. Ochsner:—I will confine my discussion to that part of the symposium which Dr. Walls has contributed, primarily because for a number of years I have been especially interested in the treatment of hernia in children. It happens that a very large number of children come to me for treatment of this condition, because of my connection with two hospitals that are largely patronized by Swedish and Polish people, so that I constantly have a considerable number of these children under treatment. In studying the literature of hernia in children I was greatly interested in finding that a commission appointed by the French government had made observations in a large number of cases of hernia under the supervision of Malgaigne, in which the history was followed, and in which it was found that 73 per cent. of all hernias in children healed spontaneously with or without treatment. To this observation was added another most interesting one. I found, in a number of children suffering from hernia, complicated with phimosis, that by keeping these patients in bed for two weeks, during which time they recovered from the operation for phimosis, the hernia became cured spontaneously. Putting these two conditions together, it seemed to me that, probably, the retraction of the hernia, whether it be umbilical, femoral or inguinal, the natural tendency of the canal is to close; that the reason why this closure is retarded in cases without treatment is because there is an abnormal intra-abdominal pressure present, as Dr. Walls has said. This abnormal intra-abdominal pressure may be due to gaseous distension, to a pressure due to the presence of constipation or a pressure due to the presence of cough, and consequently, in all of these children, with the exception of four distinct groups, the form of treatment which I have employed consisted in relieving this abnormal intra-abdominal pressure, whatever its cause might be. By relieving these conditions, I found in my practice, when I reviewed my statistics, that 97 per cent. of these cases recovered spontaneously in children less than 10 years of age.

The four groups of hernia in children, which I believe should be operated upon, are: 1. Irreducible strangulated hernias. I have had quite a number of cases of strangulated hernias in children, in which, by simply placing the child in bed for three weeks after reducing the strangulation, the hernia became cured permanently and spontaneously without operation. It would be foolish to use any violent manipulations for the purpose of reducing such hernia. 2. Those in which there is a reducible hydrocele, that is, a hernia with a hydrocele of the cord passing up into the abdominal cavity and out through the inguinal canal. In that class the cure of hydrocele results in a cure of the hernia. 3. Those in which there is adherent omentum at the bottom of the sac. 4. Those in which there is great diastasis of the muscle, in which there is no tendency at all for the muscles to come together spontaneously, a class in which Dr. Bevan has just described the operation of transplanting the rectus muscle and fascia. I have had the same experience as Dr. Andrews; a large number of cases of hernia in children have come to me for operation, upon which I have refused to operate, and I have the satisfaction of seeing them cured spontaneously afterward.

Dr. William Fuller:—I want to say a word with reference to the imbrication method or the method of overlapping the margins of the hernial incision. The

question arises whether this can not be overdone. It has seemed to me that it is possible to introduce sutures, in resorting to the imbrication method, so far from the margin of the hernial incision, that when the sutures are tightened it tears sometimes an opening at the point of the needle puncture in the external oblique aponeurosis. I would like to know whether this is due to a faulty technic or not. Perhaps Dr. Andrews can answer this question. This accident happened to me three or four times. It has seemed to me, therefore, that this is an occurrence which it would be well to guard against. It is important that we leave no weak points or slits in the aponeurosis of the external oblique, such as has been done in my hands when I have introduced the sutures too far away from the margins of the hernial incision.

Dr. L. L. McArthur:—Dr. Harris definitely marked out the era of modern hernia operations as beginning in 1888, when Bassini outlined his methods of dealing with inguinal hernia. A few years preceding that, say 1882 and 1883, the methods of treating hernia had so much improved through the application of antiseptic methods that surgeons had begun to take courage, operating upon cases which, preceding that time, had only been operated upon when surgical intervention was imperatively demanded. With the advent of antiseptic surgery it became possible to successfully narrow the inguinal canal to a much smaller lumen. I remember very well coming back to America at that time imbued with enthusiasm for Czerny's then vaunted operation for the closure of the hernia, which consisted in applying aseptic methods to the surgical closure of the canal, by the implantation for permanent residence a suture applied after the manner of a shoe lace, a needle on each end. Two-thirds or more of the circumference of the canal were included in this shoe-lace stitch, one side after the other, until the canal had been diminished to one of fitting size for the passage simply of the cord with its vessels. That operation yielded decidedly better results than those which preceded it, because of one factor which changed former proceedings—asepsis. When to asepsis were added the principles which obtained in the Bassini operation, which were more fully elucidated when Andrews showed the actual mechanical factors entering into it, the modern operation was appreciated. Those principles consisted not in bringing parallel fibers edge to edge, hoping thereby to obtain union by that aseptic granulation tissue of a delicate character which obtains when all aseptic union occurs, but in obtaining union between broad flat surfaces which were posed at right angles to the line of pressure, simulating the condition which obtains when two pieces of adhesive plaster are placed face to face. The difficulty of forcing them apart by pressure at right angles to their surfaces would be appreciated. So it is with our modern hernia operations; we unite broader surfaces than those which obtained in Czerny's time. Failures in hernia occurred, first, from a lack of aseptic union due to a suppurative process induced either by the ligature material used or by imperfect technic of the operation, later autoinfection of the buried sutures, three months, six months or a year after, because of micro-organisms floating in the blood and wandering out in the leucocyte when a certain amount of irritation by motion or pressure induced them to do. With an asceptic suture material it became possible to obtain good results by any of the methods, but not such results as will compare with those of recent date in which flat surfaces are brought together.

Six or eight years ago it was a doubtful question whether we could invariably sterilize absorbable suture material. At that time it struck me that if we could utilize some of the tissues which obtained in the wound, perhaps an advance would be made. Accordingly, in the last five years I have done every operation for radical cure (except one) by the method described in a paper of three years ago, after having waited three years before making my report. It consisted in using strips of the tendon of the external oblique, taken from the margins after the external oblique was split, in the usual methods for hernia. With that living external oblique suture it is quite possible to sew after the Girard-Andrews or Bassini method, making any form of operation that may please the fancy of the operative surgeon. I am a little chagrined that Dr. Harris should classify this as one of the absorbable sutures after the microscopic picture presented with the article, after the experimental researches made upon the lower animals, and

after the specimen from an individual who died a year after the operation from an appendicitis, and whose scar taken out still showed that these tendinous fibers remained living. Inasmuch as the line of union consists of an aseptic granulation tissue, connective tissue, it consists of that type of tissue which is capble of stretching. My idea, therefore, was that if I incorporated in this tissue which was capable of stretching, the white, inelastic living tissue of the external oblique, I added another factor to the strength of the hernial union and in this way benefited the patient. I believe now we have perfectly aseptic suture material, easily obtainable; that with the imbrication of the structures after the Bassini or preferably Andrews method, that surgeons will rarely utilize this living autoplastic tendon suture.

On Sunday last I was called to the hospital to see a patient who had on the preceding Wednesday been seized with a good deal of abdominal pain with vomiting. The patient, a man of 30, had a reducible left inguinal hernia when admitted to the hospital. He could speak very little English. But his history was substantially this: He had always a left inguinal hernia. He had no right hernia. He had never had any sickness whatever until this preceding Wednesday night. At that time he began to vomit, he had abdominal pain, and had no further bowel movements, although purgatives were given. High rectal enemata were given with no successful results. His abdomen was considerably distended, and what tenderness he had was immediately beneath the ensiform cartilage. This tenderness was pronounced. His temperature was 99½, pulse 90, leucocyte count 11,000. There was general tympanitic condition over the abdomen; but no tumor could be felt in the inguinal canals, at the umbilicus, nor through the rectum. From the subjective symptoms and the great tenderness which he manifested over the stomach, I made a right rectus incision, thinking he had possibly a small leaking stomach ulcer or trouble in the neighborhood of the gall bladder. Nothing was found in this neighborhood. The small intestines were crowded up anterior to the stomach and considerably distended. The incision was carried down lower permitting us to follow the small intestine by eventration until we came to a sac or a ring in which a knuckle of intestine had engaged, which sac was located behind the right inguinal ring, the side on which he denied ever having had a hernia. That sac held an incarcerated gut, the edges of the neck having caused gangrene in the wall of the bowel. This sac lay behind the right inguinal canal and extended down behind the obturator fascia. I am convinced now this was a case of properitoneal hernia. The man is still alive, and I hope to have a recovery, although he had gangrene of the bowel.

I, until the last seven or eight years, had felt that it was unnecessary, ill advised and perhaps a type of furor operations to take a child of 2 years, 3 years or 1 year old, suffering with a hernia, and submit him to an operation, and I believe with Dr. Walls that many a case of hernia in a child that has been brought on because of malnutrition, perhaps by a cough, whooping-cough or a severe cold (a large per cent. of the ruptures in children come from coughing or crying) can be treated successfully by a supporting apparatus until the muscular tone can be repaired by restoring nutrition or curing the cough, or preventing the child from crying. With this treatment, when the child grows up it will be as well as any having a strong abdominal wall, without ever having had an operation. It is true we can with safety now do an operation on these children, but I believe that many an operation is still made on these children because it can be done rather than because it is necessary.

Before the discussion is closed, I would like to make a remark in regard to direct inguinal hernia. Dr. Bevan has given credit to Wölfler for saying that it is curable by means of transplantation of the rectus muscle in its sheath. Transplantation of muscular tissue for the correction of hernia has proved a failure. The use of the rectus sheath is the utilization of the tendons of the oblique muscles of which it is composed. The use of the rectus sheath by an incision which cuts most of these tendons transversely to their tensile fibers is a poor utilization of it. If surgeons will not use the autoplastic method in any other way than in direct inguinal hernia cases, they have a rational means of using white inelastic tissue by taking those fibers which make the columns of the ring, and lacing the

direct hernia as a shoe is laced, with two lateral strips. A direct inguinal hernia can be cured without transplantation of the rectus muscle by the utilization of a simple suture of living material.

Dr. Harris (closing the discussion): I did not go into the history of hernial operations; I simply mentioned the one epoch-making paper which revolutionized all of our operations for hernia, and that is the Bassini. Whenever an individual presents an epoch-making paper, brings forward new principles and a new operation, we find several who claim that they did exactly the same operation years before, and that was so after Bassini presented his paper. We knew of Marcy's operation, of Wölfler's operation, but neither of them appreciated or enunciated the principles which underlie the correct method of operating for hernia; nor were the principles ever announced and brought before the profession until after Bassini's paper. He announced the principle of the restoration of the obliquity of the inguinal canal, which I still claim is correct anatomically, and of suturing the wall by layers. These two principles stand today. I do not believe, as Dr. Bevan does, and we have had many discussions over this matter, that in a normal human being the cord ever passes directly straight through the abdominal wall. From the time anatomy was first discovered and written on, it has been found that the cord passed obliquely through the abdominal wall. I have never dissected a case where it did not. I have never seen one in my hernia operations where it did not, except where the hernia had produced a straight hole by the two rings enlarging and thus coming opposite each other.

Dr. Bevan said that most of his recurrences have been at the inner angle. That is where they take place. When you bring the cord straight out at the inner angle, that is where recurrences take place. Statistics of operations are what count. According to the statistics of Coley and Bull, of 1,300 operations where restoration of the obliquity of the inguinal canal was effected, there were six recurrences. Of 125 operations where cord was brought straight out, there were five recurrences. In other words, recurrences were ten times as frequent when the cord was brought straight out as when the obliquity of the canal was restored.

In ordinary hernias, with the wire suture, we never have any trouble. I would recommend the gentlemen who are having so many recurrences in the direct variety of hernia to use the longitudinal wire suture and then they will never have them. By means of the longitudinal wire suture, that inner angle can be so firmly and closely closed up; the aponeurosis of the external oblique can be brought down so tightly and snugly to the inner edges of Poupart's ligament and Gimbernat's ligament that there is no opening left, and the wire will hold there long enough and firmly enough until the tissues unite, so there will be no recurrence.

A joint meeting of the Chicago Medical Society and the Chicago Urological Society was held Jan. 24, 1906, with Dr. Wm. L. Baum, president of the latter society, in the chair. Papers were read as follows:

1. "Syphilis of the Male Genito-Urinary Tract," by Dr. Henry G. Anthony. (See page 249.)
2. "Tuberculosis of the Male Genital Tract," by Dr. A. H. Ferguson.
3. "Tuberculosis of the Male Urinary Tract," by Dr. A. D. Bevan. (See page 245.)

The symposium was discussed by Drs. F. Kreissl, Gustav Kolischer, Victor J. Baccus, A. H. Ferguson, and Arthur Dean Bevan.

DISCUSSION.

Dr. F. Kreissl:—Just a few words with reference to primary and secondary tuberculosis of the bladder. I am not so pessimistic as Dr. Bevan regarding the treatment of vesical tuberculosis, because my experience has taught me differently. It is true that in secondary descending vesical tuberculosis the results of topical applications or surgery of the vesical lesions will be disappointing, while the removal of the kidney, as the primary focus will be followed by a speedy repair of

the bladder lesions oftentimes without any further local treatment. Judging from my own observation and the experience of others, there is no doubt that a certain number of primary tuberculous lesions of the bladder, if not too far advanced, to get well under topical applications with iodoform, guaiacol, bichlorid, etc., and it is equally true that neither these nor any surgical intervention will have any result in very extensive lesions.

Referring to the difficulty of the diagnosis of tuberculosis of the cord, I have a case in mind which I had the pleasure of seeing with Dr. Bevan and a number of other physicians in this city who all pronounced it as tuberculosis. The patient was a young man, 36 years old, who, after being kicked by a horse in the left lower abdomen, experienced much pain along the spermatic cord. Two weeks later while walking in the car of a moving train he slipped and fell astride the arm of a chair. Since then he has noticed a slight swelling of the epididymis and nodules of different size along the cord painful to touch. He gave a history of two attacks of pleurisy, loss of flesh, complained of a hacking cough and night sweats. While keeping the patient in bed for several weeks, the nodulation progressed along the vas deferens up to external inguinal ring when I decided on operation. Exposing the cord, I found a phlebothrombosis of a vein closely attached to the vas deferens. The night sweats were explained later on when the patient admitted that he was addicted to morphin and commenced to cure himself of the habit shortly before he came under our observation.

Dr. Gustav Kolischer:—It was first Kümmel and later Rovsing who pointed out that if we removed the inflammatory focus of a tuberculous kidney in certain cases, the bladder lesion would heal up. That is true, as proved by our own experience. It is just as true of primary tuberculosis or secondary tuberculosis of the bladder under certain conditions, which will give very satisfactory results from operation, as Dr. Bevan mentioned. It all depends, however, what kind of tuberculosis of the bladder is found. We can neither say in a general way that the removal of the focus of tuberculosis will effect a cure, nor can we say such a focus of tuberculosis of the bladder will not heal. These things can be determined only by the pathologic facts. We may find around the ureteral opening that there are a few disseminated ulcers, with undermined edges, and a few gray tuberculous nodules. In such cases we get very favorable results if the kidney which caused the descending tuberculosis is removed. We get a good result whether we interfere locally or not. Rovsing especially recommended the injection of 5 per cent. carbolic acid solution into such a bladder after the kidney is removed. In the case of a young girl upon whom I operated a few months ago, for the removal of the kidney on one side, we found three ulcers, which healed up inside of three weeks after the operation. Now, whether the healing of these ulcers was due to the injection of the carbolic acid, or to the removal of the kidney solely, I do not know. If we find disseminated tuberculosis in the mucosa of the bladder we will have good results.

The first good results were reported eighteen years ago by Bardenheuer, who made a suprapubic cystotomy, and excised the entire bladder mucosa, which he thought was involved in the tuberculous process. We get exactly the same results in cases of limited disseminated tuberculosis by local interference. Dr. Schmidt presented such a case years ago before this society, in which both the clinical and microscopical diagnoses were tuberculosis, with the presence of a few ulcers. Dr. Schmidt curetted the ulcers, then cauterized them, and effected a cure. If we get tubercular cystitis, where the mucosa and submucosa are involved in the tubercular process, and there is an infiltrating tuberculosis, whether it is primary or secondary, whether we remove the kidney, the prostate, or the whole genitourinary apparatus, whether we excise the mucosa or cauterize and apply iodoform, or anything else, we will never have a favorable result. These cases are incurable. Involvement of the submucosa, or the muscular coat in the infiltrated form of tuberculosis is beyond cure. Removal of the kidney, excision, cauterization, are followed by no result whatever.

There is one point to which I desire to call attention, and that is quite often the first symptom of tuberculosis of the kidney, is frequency of urination. These patients, often without further examination, are treated by different methods. The urine is not properly examined. In young women, where the bladder is

extremely tolerant, tuberculosis may exist for any length of time without causing serious symptoms. We find quite often, if we examine the bladder with the cystoscope, ulceration around one of the ureteral openings; if the patient had never been subject to any other infection, gonorrheal or otherwise, that points to a diagnosis of tuberculosis of the kidney. I can not emphasize too strongly the importance of examining the urine carefully in these cases, preferably by the inoculation test.

I would like to call attention to one technical trick which is useful in such cases. Tuberculous bladders are irritable, not in the usual sense of that term, but it is impossible to dilate such a bladder artifically. If you try to flush out the bladder by repeated flushings, it will become so irritated that it will not dilate any more. In such cases it is advisable to use the method which Fenwick generally employs, that is, simply waiting until the urine dilates the bladder, and then using the cystoscope. We do not encounter any difficulties in using the cystoscope then, because there is not much secretion of pus and we can bring the cystoscopic window close to the wall of the bladder.

Dr. Victor J. Baccus:—I have read the article of Rovsing to which Dr. Kolischer referred, but he is much more enthusiastic over his results of bladder tuberculosis after the primary focus in the kidney is removed. He claims that by irrigating the bladder with a 5 per cent. solution of carbolic acid he has seen extensive ulceration of the bladder heal. These irrigations were made daily, and a 5 per cent. solution of carbolic acid is allowed to remain in the bladder five or ten minutes.

Dr. Bevan, closing the discussion:—I would like to emphasize one point that has been developed in our recent work in connection with genital tuberculosis, that is, tuberculosis very frequently is primary in a single kidney, and that the lesser operations of nephrotomy and resection can not be relied upon; that the weight of evidence would seem to be in favor, where we make an early diagnosis and determine the existence of another healthy kidney, of a radical removal of the involved kidney. This is the one great step that has been developed from our recent study of tuberculosis of the urinary organs.

A regular meeting was held Jan. 31, 1906, with the president, Dr. Charles S. Bacon, in the chair. Dr. Elmer L. Kenyon read a paper on the treatment of stammering.

THE TREATMENT OF STAMMERING.

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The speech mechanism is a contrivance by which a walled column of air may be quickly set in motion by compression upon its closed end, while at the same instant its outward movement is impeded in a definite manner at certain points in the course of its passage. A certain retarding placement of the articulating organs, tongue, teeth, palate, etc., produces its own characteristic elemental sound, and all of the sounds resulting from the various placements constitute together the elementary sounds of the language. In the production of the complicated movements required for each elemental sound, each organ of the speech mechanism must act in instant harmony with the corresponding movements occurring in each one of the other organs concerned in the production of the particular sound. It is important to recall, also, that this whole process goes on without conscious direction, that is, automatically. In carrying on the speech function it is thus evident that an exceedingly intimate association of action between the groups of muscles of the speech series is required. All must act at the same instant in mutual harmony. Imperfection or hesitation in the movement of any one group is capable of disturbing the smoothness of action of all, and thus the whole apparatus may become disconcerted.

Here lies the key to the explanation of the disorder of speech in question. Resting usually upon a nervous constitution somewhat easily perverted, stammer-

ing is a functional disturbance in the action of the complicated nervo-muscular speech mechanism. Most often the laryngeal lags behind the articulative apparatus, or else does not act vigorously and distinctly enough. This results in a wavering, a hesitation. There are various sorts of effort for relief made and various degrees of intensity in the struggle. Behind this difficulty with the laryngeal sound we usually may discover a deficiency in the compressive action of the chest, or else imperfect methods of breath control. Muscular spasm enters more or less into most cases of hesitation. Imitation, suggestion and habit often play a most important part in the explanation of individual cases. The peripheral organs of the stammerer are not impaired in any manner peculiar to this class of sufferers. But peripheral abnormalities of the common type may be the determining factor in setting going the slight imperfections of co-ordination which are to result in a stammering habit.

Coming to sum up these brief suggestive remarks upon the nature of stammering, we should bear in mind the subconscious control and action of the speech mechanism, the functional character of the disorder and its usual basis in an easily disconcerted nervous organization, its possible incitation by peripheral abnormalities, the tendency of the trouble to become more and more firmly engrafted as time elapses, and, we should add, the helplessness of the sufferer—barring exceptional cases—to relieve himself.

In meeting the problem of treating stammering three main ideas are to be advanced: 1. Education. 2. Discipline. 3. Correction of general organic disability and of peripheral abnormalities. The last of these considerations we shall pass over lightly, as bearing rather upon individual cases than upon the general problem of treating stammering. Abnormalities in the region of the tongue, palate, pharynx, nose or larynx capable of interfering with the free movement of the organs concerned in the production of speech should, if possible, be eliminated; and in individual cases the general health and strength are not to be overlooked. Coming, then, to the main considerations of "education" and "discipline," we must, first of all, bear in mind the helpless ignorance of our patient concerning the technic of speech production. Therefore, in order that he shall acquire a knowledge of what to do in order to handle his speech apparatus, we at once make him a student of normal speech from the standpoint of the technic of its production. Also, the control of the speech mechanism is severed, so far as can be, from the control of the subconscious centers and placed in charge of the superimposed conscious mentality. The speech organs hereafter during his training are to act exactly and only as the will directs. The handling of the chest for compressing the air column and the manner of action of the articulating organs and of the larynx in the production of each elemental physiologic sound are carefully taught. These sounds and their simple combinations in great variety are practiced. Words are spoken with distinct syllabication.

In order to accomplish our purpose, the acquirement by our patient of a full and ready conscious control of the speech apparatus, he is set definite, conscious tasks, each having reference to the demands of normal speech. He must exercise positive, unhesitating control of his speech mechanism. Each muscle group must act in exact harmony with the other muscle groups. Bearing in mind the chest action particularly, the patient is to be given as ready control in this direction as, for instance, of the opening and closing of his fist. The enlargement of the chest capacity and the proper control of the breathing for speech purposes are matters often demanding especial training. Indeed, each instance of the disorder will be found to present its own peculiar needs. Extreme muscular spasm will require especial adaptations in order to produce diffusion of the overconcentrated nervous energy. In the course of time the patient has ceased to stammer. He has gained control of his speech mechanism and directs it correctly in detail as a conscious process. But even then the fight is only well under way. Through the conscious correct action of the muscles of speech the discipline of the subconscious nervous structures must go on until they can be freely entrusted to assume control. A firmly rooted habit of any sort is not easy of eradication. The persistent exercise of firmness of purpose through a long period and often under trying circumstances sometimes taxes the stammerer's will to the uttermost. In some cases we are

obliged to confront this situation, that the patient would rather stammer than carry out the fight necessary for his release. The forceless and vacillating in temperament will be a much harder problem than the courageous and firm. The former may require much encouragement for months, or even years, while the latter may recover normal speech with remarkable quickness. It will be seen that the tactful resourcefulness of the director will find unending occupation in the course of his labors with the various types of the disorder and with the various temperaments of the sufferers.

The beginning of training should be made as early as the discovery of the fault. This forestalls the establishment of the habit feature, which is in itself difficult to overcome. If the family physician who first sees these cases would assume unhesitatingly, even though the defect be slight, that the general development of serious stammering is the regular outcome, and if he would proceed accordingly, untold mental suffering could be averted. It may be necessary in the very young child chiefly to guide him out of his excitable periods and into a slower and more distinct and more forcible manner of speech. But even in the young child it usually is desirable and even necessary to enter upon a simplified course of training upon the general lines already laid down. The factors which bear toward a less hopeful prognosis may be stated as follows: The instances in which the disorder is most firmly rooted in the nervous structures are least hopeful. Habitual severe spasms render the case much more difficult. The older the patient the more firmly the habit is rooted and consequently the harder the cure. Extreme weakness of will as well as extreme indifference constitute, unless they can be controlled, almost hopeless mental states. Finally, circumstances interfering with an efficient course of training are sometimes hard to overcome. In actual experience the element of doubt most often arises from the difficulty of enforcing a sufficient degree of earnestness and persistence. In general the majority are curable and nearly all can be much helped.

The author wishes to acknowledge his indebtedness to many authorities, including particularly Merkel, Gutzman, Kussmaul, Bell, Makuen and Wyllie. He takes especial pleasure and satisfaction in publicly acknowledging his great indebtedness to Dr. G. Hudson Makuen, of Philadelphia, whose patient personal interest and guidance, taken with his fine mastery of this subject, has accumulated an indebtedness not easily to be repaid.

34 Washington Street.

Discussed by Dr. West and Dr. Kenyon.

Dr. Alex. C. Wiener read a paper entitled "Artificial Hyperemia in Surgery (Bier's Method)." (See page 241.)

Discussed by Drs. Edward H. Ochsner, Edwin W. Ryerson and, in closing, by Dr. Wiener.

DISCUSSION.

Dr. Edward H. Ochsner:—Eleven years ago this month there was in this city a man who called himself Sampson, who was a great athlete, and I had the opportunity of examining him. He suggested to me the usefulness of a treatment similar to that advocated by Bier. I do not know where he got it, but immediately after his suggestion I had an opporunity to use it on a patient with severe involvement of practically all of the joints of the body. It differed somewhat from the Bier method, but I found it so useful that I have used it constantly ever since in many cases, and with the exception of one or two cases, who refused to continue treatment, I have had remarkably good results. To-day I had a patient in the hospital for an operation who has been under this treatment for the last two months, because of gonorrheal involvement of nearly all the joints of the body, and the improvement was so marked that the joints were all free, except the shoulder joints, where the application of the method is rather difficult. The treatment was not given to me in detail. I had to work it out. The method is the following: I take an ordinary elastic bandage, ordinary elastic tape, and apply it around the extremity until the pulse stops beating, and when the pulse stops beating I have reason to believe that both the arterial and venous circulation have been interrupted. I now relieve the construction until the radial or post-tibial

pulse can again be felt. From this point on I differ from the old-fashioned Bier's method. I then direct the patient to perform all the different movements that are possible with the limb. For instance, if it is the arm I direct the patient to make slow motions, extension and flexion, ten times, then the different motions of the wrist. If the treatment is properly applied it causes no pain, and when the constriction is taken off, the arm or the extremity, whichever it may be, is red and warm. I am very skeptical as to whether the ordinary Bier treatment would be as useful in these conditions. In inflammatory conditions, where you want mobility of the joint, I should very much prefer the active method of treatment. It certainly has a wonderful power to absorb the deposits in the joints. Patients who have been bedridden for two weeks and months, and even years, if they can get any motion at all in the extremity, will absorb practically all of the deposits. If there is no motion in the extremity I anesthetize the patient first and break up the adhesions and then begin the method, and in a relatively short time the motion of the joint will come back.

In reference to the use of Bier's method in tuberculous joints I have been very conservative, as I have had such excellent results with the old-fashioned method of treatment. However, in order to get good results one must follow it out logically. It consists, first and foremost, in preventing secondary infection. That is the essential thing in the treatment of tuberculous joints, and it is a thing that nine men out of ten have not learned. The number of cases I see yearly where some surgeon has changed a harmless, simple tubercular infection of a joint into a serious, severe, dangerous, life-endangering condition, with secondary infection, is appalling. The first and most important thing, then, is not to cause secondary infection. The second thing, if one follows the old method of treatment, is immobilization, and the third thing is hygienic treatment. If one decides to follow the old method of treatment he must follow it and not vacillate between the two. I follow the old system and have had uniformly good results with it, and because I am not so sure that Bier's method is going to give as good results I have been willing to let other people try the Bier method first.

Dr. Wiener mentioned a boy who developed tuberculosis of the lungs, in which the Bier method of treatment was used. I do not wish to ascribe the lung condition to the Bier treatment, for patients with tuberculosis of the joints are liable at any time to develop pulmonary tuberculosis, but the question as to whether a larger percentage of these cases develop pulmonary or miliary tuberculosis following the Bier method of treatment than they do by the old system of immobilization and rest has still to be worked out, and so long as the old method continues to give me as good results as it has in the past I am perfectly willing to let others solve this problem.

Dr. Edwin W. Ryerson:—My experience with the method of Bier has been confined entirely to the treatment of tubercular joints. I do not know anything of what it does in other kinds of infections and other kinds of diseases. I take the position that anything which anybody has found useful in the treatment of tubercular joint disease should be investigated very thoroughly. Tubercular joint disease is one of the most relentless, one of the most difficult diseases to cure, and one of the most persistent things I know of, and I am willing to try anything that offers any reasonable amount of hope. When I first heard of this method I did not think it was worth the paper the description of it was printed on. I did not see how simple passive congestion of any joint could affect the tubercle bacilli that were deeply situated in some bone focus far below the power of this constriction to reach. But I read a good deal about it, and have now tried it in five cases, and it seems to me the cases in which I have tried it and am trying it have done better than the ordinary cases in which it has not been used. When Dr. Wiener takes the position, however, that we can use Bier's congestion method alone and succeed in so very many cases I differ with him. I take the same position with regard to iodoform emulsions injected into joints. It is not many years ago that distinguished surgeons in this city were taking little children with tubercular hips or tubercular knee joints and shooting them full of iodoform emulsion, and sending the children home and saying, "That is all you need to do." I have seen

some of the late results of that kind of treatment, and I do not propose to have my cases subjected to such reckless and reprehensible treatment. I do not propose to have Bier's congestion method alone used in a knee or hip joint that is diseased and carious, that is full of tubercle bacilli, but I do propose, as I have done in the past, to keep on with fixation dressings, so as to give me a large proportion of perfectly useful and good joints. There is no reason on earth why Bier's method of congestion can not be used in connection and in conjunction with our splints, our immobilization, protection, possibly traction, if that be judged necessary. There is no reason why an elastic bandage should not be applied once a day or twice a day, or as often as the surgeon deems it is necessary, and the fixation continued during the rest of the time. And that is what I have done. I have a case under observation treated by the Bier method that is doing better than is my general hope for such cases. I have other cases that are improving fast. I recall one case in the service of Dr. Hosmer at the Policlinic, a man, 53 years of age, with a tubercular elbow, the kind of case in which one would expect conservative treatment to be useless and which would call for resection or amputation. This joint was interefered with slightly, that is, it was opened and superficially curetted and drained, and then the Bier method was tried. There is now the very slightest amount of discharge from the one remaining small sinus. The swelling is all gone; there is a little motion in the joint, and everything seems to point to a rapid and perfect recovery. As to motion, I can not speak. But I wish to point out that in my opinion any man who lets his patients walk around on diseased knees or ankles without protection, without some form of apparatus that takes the possibility of weight-bearing off of that joint, is not treating the patient in the broadest way, according to my views. The mere mechanical irritation and wearing away of two diseased joint surfaces are very great; in addition to the destruction of the tubercle bacilli, the mechanical grinding of the two joints against each other is certain to produce harm, and when it is so simple to use fixation and protection, as well as such things as Bier's method and possibly injection with iodine, the child should be given the benefit of the doubt and given every possible form of aid.

The trend of modern treatment of all forms of tuberculosis is to keep patients out of doors as much as possible, as they do much better than those cases that are treated in hospital wards. I can not let the opportunity go by without the remark that all cases which can be kept out of doors, just as is being done now with patients with tuberculosis of the lungs, will get along much better than they have done in the past.

Dr. Wiener (closing the discussion):—Dr. Ochsner made the remark that he was doubtful whether the lung infection in the boy was produced by the Bier treatment. In this boy the lung was first infected and tuberculosis of the ankle joint was secondary. An abscess was opened, and as usual this procedure was followed by one of those much dreaded mixed infections. The case was turned over to me by Dr. Butler, who had, on examination, found lung lesions.

The Bier treatment and hygienic treatment are, of course, not opposed to each other. Quite on the contrary. If Dr. Ryerson thinks that a child with a tubercular joint which causes considerable pain will use that leg he is very much mistaken. He knows better. The child will refuse absolutely to walk. Whenever Bier's treatment is used for a couple of weeks an intelligent child, even two and a half years of age, will by its own volition step on the foot and surprise its mother. As to mixed infection of the ankle and knee joints, it is absolutely necessary to treat them with the Bier method if you want to have good results. Ten, even five, years ago Bier was a very much abused man in Germany. Everybody laughed at his method. It is very essential to witness this method of treatment. It is surprising to notice the results from it. Nature has provided pain to protect us. If pain be absent, we know it can do a patient no harm to use the extremity, and I can assure you you do no harm if you treat a patient by the Bier method. Do not expect results in tuberculosis sicca. Do not use it in very progressive mixed infected cases exclusively. Bier's method does not exclude operative work for the purpose of cleaning out sequestra and necrosed tissue. On the other hand, if you have a patient who comes under your care with a high temperature, who is

emaciated, has night sweats, who suffers in addition to changes in the lungs from tuberculosis of joint, use the Bier treatment prior to operative procedures. After the patient has been operated on, reduce the Bier treatment to one hour a day. We know that a patient suffering from gonorrheal infection of the knee joint, which is badly swollen, very red, will cry out if we approach the bed and lift up the bedclothes. This condition will soon be alleviated by the Esmarch bandage. In using the Bier treatment in acute cases it has to be applied in a hospital; the interne has to be in constant attendance to relieve the patient whenever pain starts. You have to find out the amount of tension the patient can stand. After this treatment pain and swelling are relieved in twenty-four hours, and the temperature, which ranged from 102° to 105°, goes down to normal in three days. On the fourth day the swelling disappears and the patient can move the joint. Again, if you have pus infection of the joint and there is danger of ankylosis afterward, use the Bier treatment. Then the pus becomes practically sterile, and with small incisions you remove or aspirate it. While the matter is still running out you institute early passive and active motion, which will prohibit stiffness, whereas by the old methods ankylosis is the rule. Tubercular joints can and should be treated out of doors. Acute infections, gonorrheal or otherwise, should be treated as yet in hospitals.

Dr. Alfred C. Croftan followed with a paper entitled "An Analytical Study of Uremia, with Some General Considerations in Regard to Its Causes and Treatment." Discussed by Drs. N. S. Davis, James B. Herrick, a member and, in closing, by Dr. Croftan.

AN ANALYTICAL STUDY OF UREMIA, WITH SOME GENERAL CONCLUSIONS IN REGARD TO ITS CAUSES AND TREATMENT.

ALFRED C. CROFTAN, M.D.

CHICAGO.

(*Abstract.*)

The prevalent belief that uremia is due to insufficient elimination of excrementitious urinary bodies through the kidneys and resulting retention of these ingredients in the blood and tissues does not stand the light of critical illumination, for there are many cases on record of complete anuria persisting for many days, even weeks, in which none of the typical signs of uremia developed. Inversely, uremia has often been known to appear when the excretion of urinary solids and water did not deviate in any way from normal. In nephrectomized animals death occurs very soon, it is true, but the symptoms are not synonymous with those considered typical of uremia in human beings. If urine is finally injected into an animal, poisoning sets in, but the symptoms are different from those of uremia. We must, therefore, clearly distinguish, it appears, between uremia and urinemia, or urine poisoning. Many of the signs of urinemia appear in uremia, but also certain other signs besides; and as the latter are particularly characteristic of uremia, and as they never occur in simple urine poisoning, we are forced to the conclusion that they must be due to other causes than the simple retention of bodies that should normally have been excreted in the urine. Again, if uremia were due to retention of these bodies, then the blood in uremia should show an increase and the urine a corresponding decrease of urinary substances. A critical sifting of the data on this subject scattered through the literature, coupled with a few studies by the author, fails to reveal, however, that such conditions actually exist in most cases of uremia.

Attention has been directed chiefly to the nitrogenous bodies and to the inorganic salts of the blood and urine in uremia, principally because these two groups are well characterized (at least as groups) and their analysis is comparatively simple and exact. In the case of the nitrogen bodies the following statements approximately summarize what has been discovered: 1. Uremia often develops without any determinable accumulation of nitrogenous bodies in the blood. 2. Uremia occasionally develops when these bodies are below normal in the blood. 3. Uremia often fails to appear in many states in which the increase

of the nitrogenous constituents of the blood is very marked. In the urine similar conditions are found in regard to the nitrogenous bodies, viz.: Uremia may occur (1) when the patient is in nitrogenous equilibrium, i. e., when the nitrogen intake corresponds to the nitrogen output, (2) when the nitrogen output is far above normal, and (3) when the nitrogen output is below normal as compared to the nitrogen intake. It does not appear from these collected statistics that uremia is by any means more frequent when the urinary output of nitrogen is low than when it is normal or high. (That the manifold dietetic and metabolic factors that influence the urinary excretion of nitrogen have been carefully included in these calculations need not be emphasized.) Whatever inaccuracies of method may be feared to vitiate the result in the case of the nitrogenous bodies of the blood and the urine need not be dreaded in the case of the inorganic saline constituents of the blood and the urine, for here we can employ certain physical methods of quantitative analysis that are very exact. I refer to cryoscopy of the fluids to be analyzed and the determination of their electric conductivity, as both the freezing point and the electric conductivity are functions of the salt content (molecular concentration) of the blood or the urine, and as they are almost totally independent of the presence or absence of nitrogenous bodies the figures obtained from the numerous tests that can be made in the same subject within a short space of time by these methods give us invaluable information in regard to the concentration of the urine and the blood in uremia. A summary of the findings in regard to the salts of the blood and urine in uremia reads as follows: 1. An increase of the salts of the blood is by no means a constant finding in uremia. 2. Uremia often occurs when the salt values of the blood are normal, or even under normal, with corresponding conditions in the urine. 3. Uremia does not always occur when the salts of the blood are very markedly increased and those of the urine correspondingly decreased. There is, in fact, less evidence to show that uremia is due to salt retention than to the retention of nitrogenous bodies.

One point must be remembered in interpreting these findings, viz., that possibly in uremia certain abnormal nitrogenous or saline bodies other than those ordinarily found in the urine might be circulating, and that these bodies, being highly toxic, might produce an enormous effect and still be present in such small quantities that they would not appreciably alter the molecular concentration of the blood nor the absolute quantity of circulating nitrogenous bodies. This hypothesis will be presently referred to again. So much can, however, be said with certainty that none of the normal urinary bodies can be accused of creating the syndrome of uremia, for none of them are toxic in quantities that could not be detected by the chemical methods employed in searching for them. One might think, for instance, of potassium salts (a very popular theory), but these have never been demonstrated in toxic quantities in uremic blood. All this evidence, then, negatives the retention theory of uremia. The questions arise: 1. What is the character and the origin of the poisons (if they are not normal urinary bodies) that can be accused of producing uremia? 2. What function or functions must become perverted, what organs must become diseased (if not the kidneys) in order that these poisons may be formed? For in the absence of any organic postmortem changes to explain the syndrome of uremia one is forced to the conclusion that there must be poisons. One of the most striking facts that has been elicited in this study of uremia is the following one: The urea, both of the blood and of the urine, is almost invariably decreased, while the ammonia is increased. It is, of course, a well-known fact that the urinary urea is, as a rule, far below normal, even when all dietetic factors are taken into consideration in uremia, and this fact has been generally interpreted to signify that urea is retained. If this were the correct idea, then the urea of the blood should always be correspondingly increased; and this is not the case. It seems more probable that the deficient urea elimination in many cases of urea is due not to urea retention, but to non-formation of urea. This would explain the increase in the ammonia and point to the liver as one of the diseased organs, for it is well known that the bulk of the circulating ammonia (immaterial what its source) is converted into urea in the liver. When this ammonia is returned to the blood unchanged and appears as ammonia salts in the urine, at the

same time the urea elimination is correspondingly decreased. Other facts point to a derangement of the liver, although not with the same convincing force as the above finding. I refer, for instance, to the very common increase of the purin bases as compared to the uric acid of the urine, the increase of uric acid relative to urea and similar findings, for the purin bodies should be converted into uric acid and the uric acid into urea in the liver, and interference with the liver function leads to an arrest of these conversions. In addition we not uncommonly find in preuremic states a reduced tolerance for carbohydrates and alimentary glycosuria, and this, too, points to the liver as the affected organ. There is other chemical evidence of similar character that can not be discussed in this abstract. There is, moreover, much *a priori* clinical evidence that supports the idea of an hepatic rather than a renal origin of many cases of uremia. I need only call attention to the fact that, clinically, disturbances of the liver and the kidneys commonly go hand in hand, whereas, however mild functional disorders of the kidneys are at once recognizable in the urine, it is immensely difficult to discover direct evidence of functional inadequacy of the liver in most cases; the frequency of mild hepatic disturbances in many of these cases would, however, be readily obtained, I believe, if the liver were examined with the same degree of accuracy in each case of uremia as the kidneys. The same toxic agencies, moreover, that affect the kidneys and produce nephritis, also, as a rule, affect the liver; for to the liver and the kidneys jointly is relegated the chief disintoxicating function, not only for poisons that are formed in the bowel (and that they play an important part in the pathogensis of Bright's disease I have recently attempted to show),[1] but also for so-called metabolic poisons, i. e., products of perverted metabolism that are formed in the tissues of the body or in the liver itself, and of necessity reach the liver in the circulation before they are borne to the kidneys.

If we assume that the kidneys are always primarily diseased in cases that ultimately determine toward uremia (and I know of cases of fatal uremia in which the kidneys were found practically intact), then the bulk of the intoxicating function would be thrown upon the liver and we soon would have damage to this organ, manifesting itself primarily in a variety of functional derangements, such as those mentioned above. The character of the hepatic lesions would, of course, depend in each case upon the virulence of the circulating toxins and the length of time during which they circulated.

Another result of primarily defective kidneys would be the following: The kidneys are selective filter, intended in health to favor the passage of a variety of inert and useless end products of metabolism and to prevent the passage of other bodies that are still useful to the body. When the kidneys become diseased this filter leaks, and as a result there is a loss in the urine of bodies that still contain some potential energy and that should properly have been further disassimilated in the tissues at large, and especially in the liver. When such a loss occurs the liver and the other most active organs of metabolism must make up for this deficit by overactivity, i. e., by burning up more pabulum than normally, and as a result fatigue of those organs—in other words, functional inadequacy—must inevitably result sooner or later. When this happens, metabolism becomes perverted into abnormal channels and the blood becomes flooded with poisonous intermediary bodies or with substances that are altogether foreign to normal blood; and it is well to bear in mind that the more these bodies maintain an albuminoid character the more toxic do they become. That the general metabolism of albumin is perverted in uremia is further rendered probable by the frequent appearance in uremia of members of the acetone group in the urine and by the development of the general syndrome of acidosis that is frequently indistinguishable, especially in coma, from the acidosis of diabetes; in fact, I believe that acidosis plays as important a part in terminal uremia as it does in the terminal stages of the diabetic intoxication. Acidosis, too, would help explain the large ammonia excretion in preuremic and uremic states, for whenever the blood stream becomes acidulated, ammonia is thrown into the circulation (at the sacrifice of urea) in order to cause the rapid

1. The circumstances and treatment of Bright's disease, Jour. A. M. A., June 24, 1905.

elimination of the acids as ammonia salts and to protect the alkalinity of the blood and the alkali content of the cells of the body. Such an autointoxication, then, may follow or accompany chronic renal disease and still be due more to hepatic than to renal inadequacy; it might even appear without any involvement of the kidneys. The liver is presumably not the only organ affected. The uremic disturbance involves the general metabolism. Given such mild degrees of hepatic insufficiency as have been described above, it would not require much to cause an acute exacerbation and therewith a uremic attack. What these manifold factors may be can not be enumerated in this abstract. One thing becomes clear, however: that it is of as much or even of greater importance to recognize early stages of hepatic insufficiency, if one would prevent uremia, as of renal inadequacy, and that treatment, to be successful, should be directed as much toward correcting the general metabolic perversion and the disorder of the liver in particular as toward correcting whatever defect may be discovered about the kidneys.

In regard to the general principles that should, therefore, obtain in the treatment of uremia, I quote as follows from my recent article in the *Journal of the American Medical Association:* "We are wont to treat uremia by stimulating the flow of urine, by purging and by sweating, with the intention of forcing the kidneys to resume their work, and of ridding the body of the urinary bodies that we imagine to be circulating in excess. In addition we attempt to regulate the diet in such a way that there shall accumulate in the blood the smallest possible amount of residual nitrogenous bodies (Harnschlacken). If, now, uremia is not due to the circulation in excess of such bodies, the above therapy is wrong. It is questionable, moreover, whether any of the above measures can at best do more than rid the body of the water, some sodium chlorid and possibly a little urea; the loss of water one might imagine to do more harm than good, for it should promote the concentration of the poisoned body fluids and hence render them more toxic. There is surely no exact evidence to show that the sweat or the urine of uremic cases after the use of diaphoretics and diuretics becomes more toxic than before; nor has any one ever succeeded in demonstrating in such sweat or urine any of the albuminoid or alkaloid bodies that must be accused of causing the most fulminating symptoms of uremia.

"The chief object of treatment should be to prevent the development of acute uremia by giving attention to those organs and functions that threaten to fail. In order to do this intelligently, the renal idea should be relegated to the background and more attention should be bestowed in pre-uremic states on the liver and the general metabolism. The liver, above all, should have a rest. To stimulate the liver in chronic uremia is bad practice. The same principles should obtain here as in the treatment of a fatigued heart or a fatigued stomach or a fatigued nervous system. First rest, then graduated exercise until the normal tone is regained. Stimulation should be reserved for emergencies and as a last resort. To accomplish this end all articles should at first be eliminated from the diet that can irritate the liver or stimulate it to increased functional activity; every effort should be made to reduce intestinal putrefaction to a minimum, for intestinal toxins as they reach the liver severely strain the disintoxicating function of the organ. No cholagogues should be administered. After a period of rest—and starvation for a few days seems a rational plan—the liver may be gently stimulated in the hope that it may be coaxed gradually to resume its functions. This should be attempted by the carefully graded administration of salicylates, of bile acids, possibly of calomel; in addition, various dietetic and physical means may be adopted that we know to be capable of stimulating the various functions of the liver. All this treatment should be carried on with careful supervision and daily control of the effect of these measures on the functional activities of the liver, as evidenced by the composition of the stools and the urine and the general condition of the patient. The details of the various means mentioned and of the symptomatic evidences of the state of the liver function can not be discussed within the narrow frame of this article. I content myself with establishing general principles. The treatment of the acute uremic attack is always an ungrateful task, for it is immaterial whether we are dealing with a disorder that is primarily or in its ultimate consequences

due to renal or hepatic or general metabolic insufficiency; in any case we are dealing with a terminal syndrome that is due to the crumbling of the whole cellular edifice. To arrest this collapse, essentially means to revive a dying organism. That this may occasionally be done for the time can not be denied; and as the recuperative powers of the human body border on the phenomenal no effort should be spared to bring an acutely uremic patient back to life.

"Of sweating, purging and the stimulation of the kidneys I have already spoken. The administration of liver stimulants by mouth seems hardly feasible, and I have never seen any good effects in uremia that I could fairly attribute to this practice. The most sensible procedure is blood-letting. This useful measure constitutes a lost art nowadays, and it is time that it should be revived; we are dealing in uremia with a toxemia (for no organic lesions that could explain uremia are discovered after death), and to eliminate some of the poisons that are present in the blood by bleeding is always indicated; whether the injection of a saline to replace the lost fluid is useful or necessary is not yet established; it can certainly do no harm, particularly if some saline is injected that can stimulate the hepatic function, e. g., salicylate of soda in normal salt, or a solution of sodium citrate or phosphate in appropriate molecular concentration. Symptomatically, the use of such infusions has been useful in my hands and has occasionally caused the most alarming symptoms of uremic attack to disappear when other measures, I think, would have failed."

DISCUSSION.

Dr. N. S. Davis:—I have been greatly interested in what Dr. Croftan has said, for the chemical facts which he has pointed out so well corroborate the view which, I believe, has been growing in the minds of many physicians for quite a long time; that is, that uremia is by no means due to functional inactivity of the kidney alone, but that the liver, probably more than any other one organ, plays a part in producing it, because that organ fails to prevent contamination of the general blood stream by toxins largely generated in the gastrointestinal tract; in other words, the kidneys are in part at fault, the liver is in part at fault, and simultaneously the gastrointestinal tract or its contents are at fault, and possibly general metabolism is perverted. This view has been, in a very imperfect way, voiced occasionally during the last dozen or fifteen years. Ten years ago, not as an original thought of my own, but the somewhat elaborated thought of others, I published an article in which I laid emphasis upon the fact that in the production of uremia and in the treatment of it we must bear in mind constantly the important corelation of faulty action of the gastrointestinal tract, of the liver and of the kidneys; therefore, although this idea is not new, many of the chemical facts upon which Dr. Croftan bases his theory are comparatively new, interesting and corroborative of clinical findings. Clinicians were first led to think of this corelation of the various organs in the production of uremic symptoms, because, first, it was observed many years ago and emphatically pointed out by Trousseau that the occurrence of nephritis in scarlet fever could almost uniformly be prevented by placing the scarlet-fever patient on a milk diet and maintaining it for some time after convalescence. Secondly, it became evident that in a great many cases of uremia (I refer to the uremic dementias, mild uremic intoxications and the severer cases of chronic uremia) the symptoms could be made to disappear with uniformity and with considerable rapidity if patients were prevented from eating for one, two or more days, as the individual case might require, and if at the same time the gastrointestinal canal was cleaned by catharsis. This treatment, of course, insured rest for the gastrointestinal tract, for the liver, and comparative rest for the kidneys. These are the facts which chiefly have led clinicians to feel their way toward the theory so well expressed by Dr. Croftan.

During the last few years my attention has been called to certain other clinical facts which, I think, have a relationship to these. The similarity of symptoms of uremia, of diabetic coma and of cholemia suggests similarity of origin. Child-bearing women and those recently delivered of children are most liable to develop acute yellow atrophy of the liver which almost uniformly ends fatally with cholemic symptoms. In these cases there is also an acute fatty degeneration of the

kidneys. It has been pointed out, too, in very many cases in which there is no cholemia, in which there are no fatal results of hepatic origin, but still cases that are fatal for other reasons and that come to autopsy that there are frequently coincident degenerative changes in the liver and kidneys. These pathologic facts suggest, too, that there is an etiologic and pathologic relationship between cholemia and uremia. I doubt if there is much weight to be placed upon one point to which Dr. Croftan called attention, and that is to imperfect metabolism growing out of the failure of the kidneys to perform their vital filtering work properly. I doubt if there is any real relationship, for instance, between the production of a copious albuminuria and conditions which would lead to uremia. Uremia occurs quite as often, or oftener, in those cases in which there is little albuminuria—for instance, in cases of contracted kidney, and certainly in these it is not the escape of albumin from the blood which leads to imperfect metabolism so great as to produce the toxins of uremia.

In regard to the treatment, I agree entirely with Dr. Croftan as to the doubtful utility of sweating patients who are in an uremic condition, unless they are at the same time very dropsical and we are aiming to relieve the dropsy rather than to bring about elimination of poisons. In regard to the administration of water, I believe in administering it with a considerable degree of freedom, not alone for the purpose of forcing the kidneys to additional work, although this is important, and we can only accomplish it by giving water in sufficient amounts to prompt these organs; but it is also important to administer water to maintain functional activity of other glandular organs, and particularly of eliminative organs, like the liver. If we stop giving fluids we will not get copious secretion by the liver or other glandular organs. The excretory functions of the liver are all-important in preventing the production of the symptoms which we are discussing—uremic symptoms. Moreover, by the administration of fluid the poisons in the blood will be diluted. For these reasons it seems to me that the administration of water is important, although the cessation of the administration of food is equally or more important. If water is to be given, it should not be given in enormous quantities, but sufficient to maintain normal excretion from the various glandular organs, particularly from the kidneys and from the liver, providing these organs are healthy.

A word in regard to the diet. When it is safe to begin to feed a patient at all, only the blandest and simplest food should be given. I mean by that not only easily digested food, but food that is in its composition as uniformly the same as possible. You will remember, we have been taught recently that in the treatment of glycosuria, starch from a single source can oftentimes be given with perfect safety; as for instance, an oatmeal diet or potato diet, which can be established with real benefit to the patient; but it is not possible to give safely different kinds of starch or starch from different sources at the same time. All this points to the fact that foods of comparatively simple construction, or of very uniform composition and moderate amount, can be managed by damaged organs, whereas mixed foods can not be. Therefore it is all-important when we begin to feed patients who have been uremic to feed them upon one kind of food or upon a simple food. I believe this is the secret of the good effect of a milk diet, which has been used so long with undoubted benefit. Unfortunately, it can not be maintained long. In milk we have an easily digested, bland form of food, and where it is the only food we give a patient a very small quantity of nourishment. Of course, there is in milk sugar, albumin and fat. Strictly speaking, it contains a variety of nutritious ingredients, but at the same time they are from one source and uniform in composition.

Dr. James B. Herrick:—A few days ago Dr. Croftan asked me if I would not come down to the meeting and discuss his paper, and he urged me to pick all the flaws in it I could. There are certainly few faults that I can find with this excellent paper, and yet I have jotted down one or two facts that seem to me to warrant criticism. The first fault is that Dr. Croftan is too good a speaker: he talks too well. He is able to present these subjects so succinctly, so logically, so clearly that he makes obscure things seem to us as clear as daylight, and he leads us frequently to think that what he is discussing is fact when oftentimes, I believe, it is

theory. Much of what he has said to-night no one can criticize, yet a great deal of it is, after all, theory. I do not mean to criticize the presentation of a paper of this sort; it is something to which we are all pleased to listen; it is most suggestive and instructive; yet I feel that we ought to view these newer theories in a critical spirit and with a good deal of skepticism. History often repeats itself. If we review the history of uremic theories it will teach us a great deal. We have only to go back sixty or seventy years to find that every few years a new theory as to uremia crops out. The first theory was that it was retained urea that produced the symptoms. Another was that the potassium salts were at fault. The theory that there was a transformation of the urea into ammonium compounds and that this produced the uremia had back of it the authority of Frerichs. Then we have the theory of Bouchard that certain toxic substances which should be normally eliminated in the urine, and which he thought he could identify, were now retained. Another theory advanced was that the condition was due to faulty internal secretion; and still another, that it was due to the retention of some of the products of imperfect proteid metabolism. All these are theories that have had their day, and now we hear comparatively little of them, and so I say, while studying these newer theories we should give them due consideration, but still view them with a critically skeptical eye and not accept them at first hand. Dr. Croftan mentioned a very important fact that we must all admit is true, viz., anuria is not uremia. The mere shutting off of the urine experimentally in the lower animals or in a human being where the kidney is destroyed by operation or disease, produces symptoms far different from those of ordinary uremia. The coma, the cardiovascular changes are usually strikingly different, and yet, while that is true, there is, after all, I believe, something to the retention theory, and I am sure Dr. Croftan believes more or less in this and puts it into practice. While in some cases there are uremic symptoms in the strict sense—cerebral symptoms, cardiovascular changes, coma—there are other symptoms that are, in all probability, due to the shutting down of the work of the kidney. If there be in our cases of uremia, as we see them clinically, a mixture of these two phenomena, a point clearly brought out by some recent writers, then in our treatment we can not, I think, be guided wholly by the theory of faulty hepatic metabolism, and I for one would not want to give up, for the present at least, some of the older methods of treatment in a given case of uremia. Many of these cases have a scanty urine; we see the shutting down of the urine increasing day by day, with an aggravation of many of the symptoms, and if we find by practice, as many of us have, that by the ordinary methods—through the skin, through the intestines, and, I believe, to a limited extent through the damaged kidney—we can secure better elimination, it is our duty to treat along these lines.

With regard to the use of water, the ideas of von Noorden have permeated this country, and I believe he has done an immense amount of good in speaking to us about the practical therapeutics of diseases of the kidney, and I for one have practiced many of his ideas, and among them I have stopped on the use of unlimited amounts of water for patients with nephritis, chronic uremia and threatened uremic coma and convulsions. But even von Noorden wisely prescribes for his patients what he terms "flushing days." Once a week, or once in ten days, instead of the patient being allowed a quart and a half of water a day, he is given three or four or five quarts, and the elimination from the kidney, or the washing out of the kidney, is not without benefit. So, too, as to sweats, I agree with Dr. Croftan that their value is greatly overestimated; yet not infrequently I have seen improvement follow their use. Usually the sweats should be given at the same time that we give the patient an increased amount of water. I am speaking now of cases without dropsy; in cases with dropsy it is generally admitted that sweating does good. Leube has called attention quite forcibly to the fact that if we sweat patients without giving them water we are really concentrating the blood. As Dr. Croftan has said, very little of the toxic material gets out, and still some of it comes through the skin. Or we may give even the much-dreaded salt solution. I say dreaded salt solution because nowadays we hardly dare to give salt in a case of nephritis. But this is apart from the question.

There is one other fact to which I wish to refer briefly, and that is this: In the treatment of our cases of uremia there are certain harmful mechanical or physical conditions that we can do something toward relieving. You will doubtless recall that Traube, some sixty years ago, stated that uremia was an edema; that uremic coma was an edema of the brain, with secondary circulatory changes, chiefly in the line of anemias. That theory has been proven to be untenable, and yet this is true: you will sometimes see patients in uremic coma, and if you make a lumbar puncture the cerebrospinal fluid escapes under greatly increased pressure. I saw this fluid just three or four days ago literally spurt for eight or ten inches. You can also get an increased amount of cerebrospinal fluid in many of those cases. The patient may, as I have seen, shortly after cerebrospinal fluid is withdrawn, be aroused to consciousness. This does not cure the disease, but it seems to me that it proves, after all, there is something to the pressure theory and the edema theory of coma, though we can not say that it gets at the root of the matter. We can temporarily, at least in some cases, improve the condition by the simple method of lumbar puncture.

Let me refer to another point right along this line. The cardiovascular changes are, of course, recognized as common occurrences, almost inevitable occurrences, in certain forms of nephritis. We are all familiar with the small, hard pulse of high tension in contracted kidney. If such a pulse is present at the wrist it is presumably present in other parts of the body, as, for instance, in the brain. When a patient comes to us with such a pulse, when we take the pressure and find it up, perhaps over 200, it is our duty to try to relieve such pressure and the vascular spasm. That can be done, in a measure, by the use of the vaso-dilators, such as iodid, the nitrites, or nitroglycerin. When a patient comes to us with all the evidences of contracted kidney, including this high vascular tension, and when by the simple use of these remedies the blood pressure is reduced by thirty millimeters of mercury and the patient tells us for the first time in four weeks he has been free from headache, we feel, after all, there is something to the spasm of the vessel in the production of symptoms. And no matter what our theories with regard to the real causation of uremia may be, we must meet certain facts as they are; we should relieve pressure if we can; we should relieve spasm of the vessel.

I should question the statements made by Dr. Croftan and Dr. Davis as to the frequency with which there will be found distinct anatomic changes in the liver in cases of nephritis. Certainly in chronic disease of the kidney, where the process is of many years' duration, there is ample time for marked changes to have occurred in the liver. I doubt very much whether the records of pathologic institutes would show a striking number of cases with anatomic change in the liver that must almost necessarily be present if the liver were the primarily important organ in the production of uremia.

A Member:—I agree with Dr. Croftan that in case of insufficient kidneys the liver takes their place in the performance of their function, and in cases of liver insufficiency the patient may present symptoms similar to those of uremia. If that is true, is it not possible that the retention of toxic material is the cause of the uremia? Recently, in current medical literature, much has been written about the internal secretions of the kidneys and of the effect of the cytotoxins in causing uremia. Retention of toxic material, as Dr. Croftan has said, has not been proven to be the cause of uremia. It has been proven, I believe, that symptoms similar to those of uremia have been produced in cases of anuria and in experimental nephrectomies when diphtheritic serum has been injected. I would like to ask Dr. Croftan whether he has come to any conclusion in reference to the nephrolysins and nephrotoxins being in any way responsible for the symptoms of uremia?

Dr. Croftan (closing the discussion):—I disagree with Dr. Herrick when he says that some of the ideas I expressed in regard to the causes and the treatment of uremia were largely theory. They were not theory. I do not think that they can be dignified with this name. They were merely hypothesis. I hope some day, however, that this hypothesis will attain the dignity of a theory. What I was trying to express was my dissatisfaction with the current uremia theories, notably with the almost universally accepted retention theory. I tried, by a critical re-

view of all the literature available and, in particular, of the chemical and clinical evidence that I could discover, and to which I modestly added some scanty studies of my own (scanty because the facilities in the hospitals I have so far been connected with are so utterly inadequate to enable exact work), to correlate as many facts that had a bearing upon the subject as possible and to make these facts the basis of certain conclusions. Upon this basis a very good working hypothesis can be constructed. It is to be hoped that more facts will be adduced to strengthen this structure and to render it broader and more stable. I sincerely believe that uremia is hardly ever due to the retention simply of excrementitious urinary bodies, and much more often, I might say generally, due to such conditions as hepatic insufficiency, general metabolic derangements or even gastrointestinal disorders, complicated, it is true, in most cases by renal insufficiency. I omitted reference to nephrolysins; this subject is still too uncertain.

I think it was Huxley who said that "a man who is afraid to leave the basis of established facts will never arrive at the absolute truth." It is well, therefore, occasionally to take an excursion into the air, and when called down again to alight as gracefully as possible; that is what I am trying to do. I was sorry that time did not permit me to go into the treatment as thoroughly as I would like to have done, because most of the discussion has been with reference to the treatment. I tried very hard to avoid non-essentials, and for the sake of clearness to content myself with establishing certain facts. I tried further to delineate as clearly as I could the indications for the treatment of uremia that could be evolved from these facts, for I felt that anybody could work out the details of treatment if he accepted certain underlying principles and indications and was guided by them.

In regard to the treatment of the uremic attack I said very little, because I have never been so fortunate as to cure such an attack. Dr. Herrick has in his usual able, clear and concise manner described practically all the measures that can be and should be employed in combating this horrible, usually terminal syndrome. Thus we all agree with him in regard to the great importance of treating the cardiovascular phenomena, of promoting vicarious elimination through the various emunctories of the body, etc. But, nevertheless, these patients die, for in them we have a crumbling of the whole cellular edifice, and no power on earth can save them. That was one reason why I was so anxious to emphasize the work that the liver and the general metabolism play in the production of uremia, and why I tried to describe what might be called preuremic states; for in this condition, that is, relatively early in the disease, a great deal can be done toward preventing foudroyant uremia, provided the chief attention is directed toward the liver, the gastrointestinal tract, the general metabolism, and the renal idea is, relatively speaking, relegated to the background. In regard to the contention that changes in the liver would presumably not be found in most cases of kidney diseases that come to autopsy, even if the liver were examined carefully, as it certainly is not, I do not know what to say in rebuttal. We will simply have to wait and see. I hope that the ideas that have been voiced to-night may stimulate pathologists to study this phase of the question a little more thoroughly. If we invert the proposition, however, I believe that I can safely say that in fully 70 per cent. of the cases of gross liver lesions definite renal changes are recorded. The one great difficulty in discussing uremia is the vagueness and uncertainty of the phenomena that can be fitly grouped under the name of uremia; this applies particularly to preuremic states. Clinically this state is more or less indefinable, almost as much so as hysteria or the uric acid diathesis; for almost any symptom can be produced about the nervous system, the special senses, the cardiovascular apparatus, the digestive organs and the higher psychic centers by the complicated intoxication that underlies chronic uremia. Hepatic insufficiency, however, which presumably produces this complicated syndrome in many cases is a clean-cut entity and can be positively diagnosed, especially with the aid of certain urinary and fecal evidence that, unfortunately, the limit of time at my disposal does not enable me to discuss.

In conclusion I wish to emphasize the great importance of recognizing hepatic insufficiency, or preuremic states, in every case that submits to an operation. Surgeons usually test the functional powers of the kidneys before administering an anesthetic. It is just as important, possibly more so, for them to in-

vestigate the state of the liver function, especially as regards the choice of an anesthetic. I believe that many of the postoperative accidents that are variously classed under the names of shock, heart failure, renal inadequacy, etc., are really due to a condition of acute hepatic insufficiency following the use of chloroform, a state that in its clinical manifestations is almost indistinguishable from an acute uremic attack. I call attention in this connection to the very interesting and suggestive recent case report of Drs. Bevan and Favill, in which chloroform produced anatomic and clinical changes in the patient that resembled acute yellow atrophy of the liver. Wherever evidence of hepatic insufficiency is found, chloroform should be administered with the greatest care; and in addition the possibility of profuse capillary hemorrhage should be considered, for in hepatic insufficiency there is a distinct hemorrhagic tendency, which may possibly be due to the presence of an excess of bile acids in the blood, for the latter produces hemolysis and interferes with the coagulability of the blood. Finally, I have been asked how it is that in advanced stages of hepatic insufficiency—that is, in cholemia—there is rarely jaundice. The answer to this is simple: The liver cells in this condition are so thoroughly unable to perform their functions that the manufacture of bile pigments practically ceases, and when no bile pigments are formed none of them can naturally be absorbed into the blood, and hence no icterus is produced.

FAREWELL ADDRESS OF DOCTOR DAVID DOHERTY,

AT THE BANQUET GIVEN HIM BY THE CHICAGO MEDICAL SOCIETY, FEB. 17, 1906, ON THE OCCASION OF HIS DEPARTURE FOR THE PHILIPPINES.

Mr. President and Gentlemen:—When I first read in the Society's Bulletin (too late to prevent it) the announcement of this great honor you do me, I was indeed surprised. Had you stopped with tne touching words of praise which the President was pleased to use in making that announcement, you would have rewarded me far beyond my deserts. The question, Why are they doing it? haunted my mind until finally I found a solution. I decided that this testimonial was not only a reward of one of your workmen, but it was itself an evidence and a product of the new spirit of activity and mutual co-operation that has within the past five or six years taken possession of the Chicago Medical Society, until it has overflowed into the entire profession of the city. Recognizing, then, the fact that other men have worked more than I, as soldiers of the common good (and you can hardly conceive the amount of detail work done by your Committees on Organization, Membership, Medicolegal Affairs, etc.), and believing that I rather than another am the recipient of such marked honor simply because I am about to leave the city, I feel that I may accept your tribute and I thank you profoundly for it.

Those of you who have read Jack London's "Call of the Wild" will remember the two dogs, types of character that he portrays: Buck, who ever strove for the mastery, who ever assailed and tore down every rival, and old Dave, who worked steadily and faithfully in his place and who, when finally, on account of his infirmities, cut out of the traces, strove to crawl back that he might die at his work. I have always preferred old Dave (my friend Dr. Banga would say, "*Nomen est omen*"), and it has always seemed to me that man can have no better ideal than to work faithfully and to die in the harness working.

I owe it to your great kindness to me to gratify a natural and friendly curiosity which you may have in regard to the undertaking upon which I am about to embark. I plead guilty to having within my bosom a wander lust, perhaps inherited, for the Gaels were ever wanderers. It may be that my recent reading of the interesting travels of our friend, Dr. Senn, who honors me by his presence here tonight, awakened my dormant wander lust. Like the doctor, I am a good traveler and I enjoy keenly sliding along the tilting deck. I escape the two vexatious annoyances of travelers which he mentions, for I never get seasick, and I sleep so soundly and snore so sturdily that I am never disturbed by what others may do.

Certain it is, gentlemen, that there is something fascinating about the mys-

terious Orient. One who has been there is as if bitten by a tarantula: there is a vague madness in his blood. Waking or sleeping the poet's refrain sweeps through his soul:

"I am fretted with the sunset,
I am weary of the bay,
For the wander-thirst is on me
And my heart is in Cathay.
There's a schooner in the offing,
Her top sails touched with fire,
And my soul has gone aboard her
For the Islands of Desire."

We "hear the East a-callin'," not because beyond Suez "there are no ten commandments and a man can raise a thirst," but because when one has once seen those dense masses of humanity, writhing and struggling like a huge mass of worms to get air and sunshine, his soul recoils at the thought that all life is "but the murmur of gnats in the gleam of a million million suns," and there awakens within him a feeling of brotherhood that is dormant in every human soul—a consciousness that we are our brothers' keepers and a divine desire to carry comfort and help to them. That is the spirit that animates our missionaries. I would fain believe that even in this mercenary age our commercialism is animated by the desire to help those peoples to better living, and I am sure that that is the spirit which has carried our flag to the Orient.

As to myself, the simple story is that I go to the Philippines to pursue certain economic and linguistic studies. I am not lured by visions of heroic deeds or thrilling adventures, but I look forward to drudging, unpoetic work. I hope to publish a Filipino-English dictionary, at which I have been working for some years past. Further, and much more important, I hope to issue a fusion speller or primer as a step toward the formation of a common vernacular speech. When we first acquired the Philippines it was said that we had to deal with 80 tribes and 120 dialects, or 120 tribes and 80 dialects, I don't know which. Later on we learned that the Filipinos are really a homogeneous people who have seven dialects, not more widely variant than the Saxon and Bavarian dialects of Germany. Unfortunately they have no common vernacular speech, which would be very helpful for their educational work, for their coming legislation and, in general, for their national unity. As to the economic studies, one example will suffice. In its recent report the Philippine Commission states that the Filipinos exhibit no alacrity in taking up the public lands under the new homestead laws. It is my purpose to learn why this is so and, as far as I can, to create a more self-helping spirit among my Filipino friends, and they are all my friends.

As to the so-called Philippine problem, I am most optimistic as to its successful and rapid solution. I base my strong hope, first of all, on the justice and spirit of fair play which characterizes the American people. We would as little deprive any people of whatever natural rights they are capable of exercising as a gentleman would be capable of robbing a child of its pennies. Further, I base it on the fine educational work that is being done among and by the Filipinos. There are at this moment about 250 Filipino young men studying in this country the learned professions, for 172 of whom the Filipino people are paying, through the commission. Besides, there are about 400,000 children in the public schools of the islands.

Now, gentlemen, I have been speaking perhaps too much about myself. In all propriety I ought to close my remarks now, and yet it seems that I should say something with reference to our society and to the profession. Therefore I crave your patience a while longer. We have reason, gentlemen, to be proud of the Chicago Medical Society. It is, perhaps, the largest medical society to be found in any city of the world, and nowhere else can be found such a spirit of harmony and good fellowship, such activity and self-sacrifice in work and such fidelity to the best ideals of the profession. There are three things that I have been especially interested in: 1. The reserve fund. If you really desire to gratify me, promise (hands up, gentlemen) that you will not break into that fund until I come back to get a share of the loot. 2. The public lecture course. This is an assured success,

doing much good and capable of being amplified so as to do very much greater good. To-night is lecture night, and it might be a good thing if we would now adjourn and attend the lecture in a body. 3. The State medical journal. Never forget, gentlemen, that we are to conduct THE JOURNAL as trustees for the State Society. It belongs to the State Society and must always belong to it. It must be conducted in the interests of that organization. Let it be scientific indeed, but not above the heads of the general practitioners, and let it aim to spread from end to end of the State of Illinois the same active and fraternal spirit that animates this local branch of the State Society. I have heard it said that country journalism is characterized by the prominence it gives to unimportant personal details. I confess I always enjoy reading the columns of personal items. I sympathize with the man whose buggy has been smashed by his runaway horse, for I had just that experience, and I rejoice with the doctor who has succeeded in building a new house. Don't you think that when I shall be far away in the Philippines, and perhaps heart-sick for Chicago and my medical brothers, I shall read with redoubled interest these personal items? If, perchance, I read that one of you has got married, in fancy I shall hear the chorus of all the bachelor doctors shouting "lucky fellow," and the married men echoing (but not so loud) "poor fellow"; and if any of you should die, which God forbid, I shall feel, "Oh, if I were again the society's necrologist what a sendoff I would give him!" And if it is noted that Dr. Doherty has gone to the Philippines, my lonesome heart may feel my best friends saying, "The chump, he didn't know when he was well off." Gentlemen, love your society, stick to it, work for it, for it is a potent instrument, not only for protecting your material interests, but for realizing your professional ideals. Finally, in regard to the profession of medicine, it has so often and so justly been the theme of panegyrists that I need not eulogize it to the extent of my high opinion of it, lest this gathering should become merely a mutual admiration meeting. It is, however, permissible to say that in it are found the finest ideals of the human soul, ideals that dignify manhood and that can clothe with the splendor of a king even the rags of a beggar. These are humanity and scientific truth. It is by virtue of its ideals that medicine is a profession and not a trade. In proportion as we lose sight of them we shall sink to the level of mere hucksters, and, *facilis descensus Averni*, it is but a logical step further to creating a demand for our services. That would be treason to the human race. What a monstrosity would that doctor be who looks only or chiefly at the money side of medicine, who, in the words of Thomas Paine, "hunts after the mammon of this world with a step as steady as Time and an appetite as keen as death." He will end by wearing his profession as a highwayman wears his mask. There is, gentlemen, no refuge from the degrading abyss of commercialism save in the contemplation and the pursuit of the ideals of medicine. There is another thing about these ideals. They are not dreams of poets nor metaphors of rhetoricians, but realities founded on conviction; and conviction is the most potent stimulant to action and results. A minister might resign his ministry because he can not be sure that he can save a man's soul, but a physician is sure that he can help, possibly can save a man's body; and, though he must still recognize the limitations of his power, his conviction trembles not, for he has before him the beckoning wand, the increasing light of advancing scientific knowledge.

Now I take it that virtue is merely habitual striving after worthy ideals. In speaking of the virtues that become a physician I do not refer to the homely and civic ones which belong to every good citizen and every decent man, which are the monopoly of no individual but the common heritage or common duty of all mankind. Neither do I refer to the heroic virtues. Both these classes of virtues belong to the individual, not to the profession as such, but I do not hesitate to aver that, with the exception of the military, no profession furnishes as large a percentage of individuals capable of heroic virtue as does the medical profession. There lingers in my memory one case of heroic self-sacrifice which made a strong impression on my life. When I was a boy in my teens the church which my parents attended had as sexton a man about 30 years old, who had a wife and two children. He was poor but ambitious, and he began the study of medicine in the intervals of

his regular work. The whole congregation was interested in his undertaking, and in due time he graduated. That was about two years after the close of the civil war. Hardly had he obtained his diploma when an epidemic of yellow fever broke out in the South and swept north as far as Memphis, causing great mortality and vast suffering. Calls were issued for nurses and doctors to go to stricken Memphis. What were the immediate motives of our sexton-doctor I know not. Perhaps he meant to acquire experience, to gain reputation, to earn money. I do not know. But this I know: he volunteered and within one week of his arrival in the plague city he fell a victim to the disease. All his hopes vanished, all his ambitions dismantled and his wife and helpless children left to the chances of a selfish world—if there is no God of the fatherless to have care for them. Forty years have passed, his name and fate have perhaps been utterly forgotten save by the thoughtful boy who, himself now old, pays his tribute to the memory of a doctor who gave his life for his fellow men. I have often thought of him, and the lesson I learned from him is that contained in the words of the Master: "Work ye whilst the day shineth, for the night soon cometh, when no man can work." The professional virtues, those that become a physician, are these: human sympathy, love of study and fraternal spirit. Of these, the first and chief is human sympathy. It is the core, the heart, the very soul of medicine. No other profession, not even the clerical, should be so permeated with it. I will narrate three incidents to exemplify the presence or absence of this most necessary virtue. About fifteen years ago a physician of considerable repute was speaking to me of a certain needy patient. He said: "I do not take such cases any more, because there is no longer either money or reputation for me in them." He had the wrong spirit, because he lacked human sympathy. Since that time he has been disappointed in some of his medical ambitions. And why? Because the spirit that caused those words showed itself in other ways also and forfeited him the support of his fellows. Again, I stood at the side of a surgeon in the operating room. As he took up the knife he said: "I fear this case will spoil my statistics, but it is my duty to operate." That was the right spirit; he put his duty to the patient above his own reputation. Finally, my collector told me of a case that recently happened. Of course, medicine has a business side which we can not ignore, because we also must live; sometimes the *res angusta domi* forces us into being strict, but oftener we find it difficult to control the process of collection after we have started the machinery by placing our bill in an agent's hands. At any rate, in the case I have in mind judgment was obtained against the debtor and the constable proceeded to levy. As soon as the doctor was told of it he drove to the place, paid the constable his fees and dismissed him and handed a receipted bill to the debtor. I do not know the doctor personally, but I certainly honor him, for he showed the right spirit. His human sympathy could not tolerate such extreme measures.

Now, gentlemen, perhaps I am going into too deep water in what I am about to say, but it lies upon me to say it, for I am 56 years old, *tengo cabeza*, as the Filipinos say, and I have convictions. I am convinced that the only enduring basis for human sympathy is religious mindedness. I do not, of course, mean church membership. That is a matter for the individual conscience; but religious mindedness pertains to the professional conscience. I mean by it the recognition of something beyond matter, the acceptance of a morality that is not materialistic, if such a thing as materialistic morality can exist. Too often the medical profession is charged with materialism, because the dissecting scalpel discovers no spirit. Just a fortnight ago I had occasion to meet a woman whose 15-year-old son had died shortly before. Her grief was almost irrational. Her blue eyes actually blazed as she said to me: "I hate God, I hate the doctors, I hate all men!" And she laughed scornfully as she said: "You doctors do not believe in a God, do you?" For myself I was able to answer, "I certainly do," and I tried to assuage her grief by such words of comfort as I could command. But the incident set me thinking, and this is what I thought out: unless the physician occupy a high moral plane outside of materialism he should not be entrusted with the great, the almost God-like power he has over life and death. Think of the awful responsibility that rests upon him! A callous clod must he be, indeed, who can view the passing away

of a human being without a thrill of awe. When we contemplate what death means to its victim and much more to the beloved ones whom he leaves behind, how painstaking, how conservative, how sure should be the man upon whose word rests the course of treatment, the performance of an operation that means life or death. I do not urge this reflection as an argument, because a materialist may, perhaps, have such a sense of responsibility. But the two reasons that have kept me from materialism and that lead me to assert that a physician should not be and logically can not be a materialist are these:

First—I have said that human sympathy is the essence of the art of medicine, without which it will degenerate into a base traffic. Now if all is matter, if the maimed and suffering among our fellow men are mere chips to be cast aside, why have sympathy? It is pure waste. Pity is no longer either an emotion or a motive, and the physician becomes a pitiless machine, just as his patient is a mere block. Materialism stifles the very life of medicine.

Second—Etiology is, perhaps, the chief principle of the science of medicine. We look for the cause of disease in order to prevent disease, and we look for it in order that by removing it we may cure disease. Yet etiology, the sequence of cause and effect, is the principal argument for deism, for the recognition of a power outside of matter. I leave it to theologians to thrash out to what extent such recognition means a personal God, and I am content now to record my protest against medicine being classed as materialistic.

The second virtue that becomes a doctor is love of study. His studies should be concerned chiefly with matters pertaining to his profession and his best book should be his medical society. However, it is legitimate to make excursions into other subjects. That relieves tension and preserves balance. Such side issues should not overshadow his profession, and in this respect I have perhaps deeply sinned, for I have been almost swept from my moorings, almost divorced from my legitimate mistress, medicine, by non-medical study and work. Therefore on this point I am a poor preacher. But I can at least insist that whatever we do or study outside of our profession should be worthy of a man. Along in the 70's I knew a promising artist, who told me that he deliberately went on an occasional debauch because the reaction from it gave him choicer inspiration and clearer vision. He was able to do better work in the period of reaction. What folly! He beastialized himself in order that repentance might make him feel angelic. Is it any wonder that he ruined his career, that his evil became a habit more quickly than his good, and that both his name and his work have disappeared? Let, then, all that we do or study inside and outside of our profession be worthy of men.

The third virtue of a physician should be a fraternal spirit. This may be considered with regard to the profession at large or with regard to the individual member. In its first aspect the fraternal spirit of the profession is safe in the keeping of the national organization. This was evident to me as I listened at the last meeting of our society to the papers by the secretary of the American Medical Association and by others. I felt proud to realize to what a great extent Chicago is the focus and distributing point where so much energy is accumulated and so much influence is distributed for the benefit of the profession at large. But it is in contact with individuals in the competition of daily life that a doctor's fraternal spirit is most severely tested. In that sphere the rivalry, the jealousy, the bickering (usually petty) that belong to selfishness are apt to undermine this most necessary virtue. Two considerations will help us to be strong. First, it is legitimate to desire and strive for success. But what is success? One thing is sure: it need not involve the injury or ruin of a fellow practitioner; it should not trample upon the rights of another man. You may cry "Excelsior!" in the teeth of the mountain, you may plant your standard upon its very peak, to be known and spoken of by all men, but as long as that trodden fellow being, by whose downfall you have climbed, lies at the mountain's base there is no honest success. Neither your own conscience nor the judgment of your fellows will give you plaudits. I know that some say that life is a strife. I deny it. Life is growth, and Nature and Nature's God meant opportunity to grow to be as free and fair for all as air and sunshine. The second consideration is that justice is a fundamental obliga-

tion to the human soul and that justice must mean taking everything into consideration—a man's environment, his handicaps and, above all, his motives. Hence it must lead to gentleness and not severity. The man who deals with a competitor in that spirit of justice will never trample upon him. When I look back over the years of my medical practice, perhaps the only bitter recollection I have is of the early years when I was sometimes supplanted in the care of a case, either unfairly or unnicely, by some older, abler or better known practitioner. The case meant only a dollar more to the other man, but oh, how much more than a dollar less it meant for me, for it meant, perhaps, an injured reputation, or at any rate discouragement. Hence I plead with the older practitioners to be generous with the younger man in the profession, and to set no other limit to their generosity than the safety of the patient, or, as occasionally may happen, their own need. In justice I add that, as a rule, Chicago physicians do exhibit a spirit of fair play and generosity toward one another that is most commendable.

Gentlemen, it is easy to preach virtue and difficult to practice it. Society is such an intricate machine and makes so many demands upon us for work that we find but little time to take thought, and so we gradually become part of the complex machinery, sordid, mechanical, unspiritual. It may not be amiss, therefore, to mention two simple helps that will bring us back to ourselves. Every doctor should have some *vade mecum* or favorite book which he may dip into in moments of leisure. I mean such books as Xenophen's Memorabilia of Socrates, Epictitus, or Sir Thomas Brown's Religio Medici. This latter, written by a physician in the early part of the seventeenth century, has always been a favorite with me, and I shall take pleasure in sending to each of you a copy as a souvenir of this occasion. Such books of moral aphorisms are small in compass but large in contents. They will soothe the tired spirit and arouse the discouraged heart. They will keep you human in sympathy and sane in philosophy. Listen to these reflections from Dr. Browne's Letter to a Friend: "Be substantially great in thyself and more than thou appearest to others. Increase not thyself by thy nooning shadow, but by the length of thy grave. If thou must needs reign, be Zeno's king and enjoy that empire which every man gives himself." When the world goes wrong with us, such thoughts bring comfort and courage to a man. The second help I have in mind is the Code of Eethics. It is the custom of this society to give a copy to every new member. It can not be too widely distributed or too frequently read. There is no man here, no man in the entire profession, but will get new light, new inspiration, new courage from its perusal.

In conclusion, gentlemen, there remains only for me to bid you farewell, to tell you how high I value your friendship, how proud I am to be a member of this society, how profoundly moved I am by the touching sentiments you have recorded in the magnificent book that you give me. May every success and blessing accompany the society and you individually, and may we all continue to work as soldiers of the common good for knowledge and for fellow man.

MORGAN COUNTY.

The Morgan County Medical Society met in regular session Feb. 8, 1906, at the Colonial Inn, in Jacksonville, at 7 p. m., with Vice-President A. L. Adams in the chair. The occasion was made memorable by the presence of Dr. Geo. H. Simmons of Chicago, in whose honor a banquet had been prepared. Among visiting physicians were representatives from Sangamon, Peoria, Cass, Pike, Scott, Jersey and Macoupin Counties. During the afternoon a number of physicians visited the Illinois Institution for the Blind, where the work of various departments was reviewed under the direction of the Superintendent, Captain Freeman. Mrs. Jordan exhibited the work of her remarkable little blind-deaf-mute pupil, Emma Kubechek. Following this was a visit to the Central Hospital for the Insane, which occupied the remainder of the afternoon.

Following the banquet at the Colonial Inn, the admirable address of Dr. Simmons, on the subject of nostrums, was the main feature of the evening. The underlying thought of the speaker was that the members of the medical profession allow themselves to be imposed on by

unprincipled and skillful advertisers of "proprietary remedies" in the same way and to the same extent that the laity are deceived by venders of the so-called "patent medicines." The address was in no way a remonstrance against alcoholic or poisonous drugs sold direct to the patient, such as is being urged by certain lay journals, but a wholesome, kindly illuminating protest against the practice of physicians allowing themselves to be blinded by the absurd claim of so-called "chemical companies," and led to prescribe ordinary drugs in unknown combinations, under fanciful names and at exorbitant prices, often in "original packages," which can be duplicated by the patient at cut rates on the bargain counter of department stores. The address was strictly on "ethical preparations," "for physicians only."

The address was followed by an interesting discussion of the subject, in which many present participated. DAVID W. REID, *Secretary.*

PEORIA COUNTY.

PEORIA CITY MEDICAL SOCIETY.

The last meeting of the Peoria City Medical Society was held in their rooms in the Observatory Building, Tuesday evening, Jan. 16, 1906, with R. A. Kerr, President, in the chair. The roll call found the following members present: Kerr, Stephenson, S. M. Miller, Kanne, Will, Marcy, J. S. Miller, Brobst, Gelder, Weber, Bacon, Floyd, Whitten, Allison, Sutton, Waln, Roberts, Hanna, Limmer, Collins, E. L. Davis, Plummer, Horwitz, and with two invited guests, Major and Parker. S. M. Miller read a very interesting paper on Exophthalmic Goitre, saying, in part:

Whatever theory we adopt as to the causation of exophthalmic goitre, we are sure that the symptoms are due to a hyperthyroidization, i. e., an excess of the internal secretion of the thyroid gland, which acts as a toxin. If the thyroid gland secretion is produced in too small quantities, the counterpart of Graves' disease is induced, which seems to be due to an excess of antithyroid substance. In order that the health be maintained, an exact balance between these two substances is necessary. An unneutralized excess of either is a source of intoxication. It is possible that there may be slight degrees of excess of thyroid substance unneutralized, so moderate as not to give rise to the pronounced symptoms of Graves' disease. Many puzzling cases, characterized by neuralgias, palpitation, hysterical and neurasthenic symptoms, may possibly be of such a nature. It will be well to bear this in mind, and to scrutinize these cases carefully. Various attempts to obtain the antibodies, which normally neutralize the thyroid secretion, have been made, with the hope that they might prove of benefit in cases of exophthalmic goitre, by neutralizing the excess. The thyroid gland of animals has been removed, and the blood serum, the dried blood, or the milk has been used, after the anti-thyroid substance has accumulated sufficiently to give rise to symptoms of myxedema. Altogether 43 cases so treated have been reported, the results have been remarkably uniform, all observers reporting their cases improved and cured. None have died, and very few failures are reported. The results compare well with those of other methods of treatment. However, the serum therapy is new, and we must remember that its exponents are apt to be enthusiastic. It seems to be worth further trials. I am using the preparation thyroidectin in the treatment of two cases. Thyroidectin consists of the dried blood of thyroidectomized animals. In one case, the improvement has been marked from the inception of treatment, with marked reduction of pulse rate, and amelioration of the symptoms, nervousness, palpitation, tremor, etc. I have also used the *x*-ray in this case; the Mayos reporting a series of ten cases so treated with marked benefit. There is some improvement in the second case, but it is less marked. However, the environment is less favorable.

DISCUSSION.

Dr. E. M. Sutton:—The treatment of exophthalmic goitre should be in accord with the cause of the symptoms, since cures occur under many different methods

of medication, including mental suggestion. I believe the surgical treatment is the best method of dealing with the disease. Based upon the theory of hyperthyroidization, the removal of a part of the structure secreting thyroidin seems the most rational. Medical treatment should precede surgical intervention in every case, care being taken, should an operation have to be performed, that the period of comparative safety be not allowed to pass by, and the operative dangers be thereby made much greater. I do not permit these patients to walk about while undergoing treatment. They are sick and unable to work at anything with success. They should be put to bed and any treatment instituted which will relieve the symptoms. Bromids, atropin, ice bag over the heart, and cathartics are of value, and in two of our cases, where marked congestion of the liver was present, iodin counter irritation was used. When the symptoms are relieved, which sometimes requires two or three weeks, the operation is undertaken. The use of animal extracts has not been found necessary in our cases, which number three in the past year, two of which belonged to the class generally considered unfavorable for operation. Recoveries were complete and prompt. Providing that the operation is carefully conducted, the mortality is low, 1½ to 4 per cent., depending upon the condition of the heart and the strength of the patient. Rough handling of the gland produces considerable shock, and to this rather than hyperthyroidization, the result of squeezing the gland, is due the alarming symptoms which sometimes follow the operation.

It is always best to drain these cases to prevent absorption of gland exudate. In one case where the drain was removed at the end of twenty-four hours severe exaggeration of the symptoms returned, but were relieved by open wound treatment and symptomatic medication. Injury of the recurrent laryngeal nerve, when only one nerve is affecteed, may not prove permanent in effect upon the voice, a huskiness lasting a few weeks or months, gradually clearing up. This happened in one of our cases, the nerve being caught in a bite of the forceps applied to the inferior thyroid vessels. Infiltration of salt solution, supplemented by a few inhalations of ether, is the method used to relieve the pain of operation. As to the comparative value of surgical or medical treatment, one can decide only by the trial, but under medical recovery, it must be remembered that the disease still remains latent.

Dr. E. E. Gelder:—As Dr. Miller confined himself to the treatment of this condition he made no mention of the relation of the sexual organs to functional diseases of the thyroid gland; but, as a matter of diagnosis of one of the cases he reported, which had only two of the cardinal symptoms, I think it well to bear this relation in mind. Doubtless all of us have seen young women who presented three of the symptoms of Graves' disease, though they did not have this affection, i. e., tachycardia, a fine fibrillary tremor and moderate enlargement of the thyroid. It is often possible to get a history which shows its relation to the sexual life of the patient. They are evidently not cases for surgical treatment and a prescription of sod. bromid, tr. nux vom., and tr. digitalis, has always benefited my cases of this kind.

Dr. Floyd:—Had not noticed that patients suffering from this disease usually came from families with a distinct neurotic taint. He had seen one case where the mother had Graves' disease and three of her sons developed it about the age of eighteen and, after being troubled for about three years, recovered, except the last one to have it, who is now about twenty. In regard to the theory of the sympathetic nervous system being the cause, while autopsies usually showed it to be affected, it was impossible for it to be the cause of the three cardinal symptoms, viz., enlarged gland, exophthalmus and rapid heart. An irritation of the cervical sympathetic nerve would cause the rapid heart and possibly the exophthalmus, but the blood vessels in the thyroid gland would be constricted rather than dilated, while a paralysis of the cervical sympathetic nerve would give the dilated vessels in the thyroid gland and possibly the exophthalmus, but the other eye symptoms and the tachycardia would be absent. He believed that the overactive thyroid gland was the original cause and its secretion a toxin and so produced the other eye and heart symptoms. He had used thyroidectin for some

months on one case and has found no appreciable benefit. He noticed its depressing effect on the heart in large doses and has also seen it cause an intense pruritis and drying of the skin. He has used thymus extract on three well marked cases and has witnessed an immediate and pronounced relief, in all the symptoms. Having used potassium iodid on one case it produced an increase in all the symptoms and nearly caused the death of the patient. Belladonna had never done any good in his experience. He once used atropin by introducing it into the thyroid gland. It produced all the constitutional symptoms, but patient was not improved. While theoretically thyroidectin was the proper thing to try in every case he found better results from the use of thymus extract.

Dr. Miller, in closing:—In reply to Dr. Roberts' query, as to how a diagnosis was made in the second case in the absence of the enlarged gland: the enlargement of the gland is not necessary to make the diagnosis. The presence of two of the cardinal symptoms, tachycardia and tremor, with the numerous minor symptoms, makes the diagnosis of exophthalmic goitre without question. In the first case that I related, in which the retrosternal dullness indicated an enlargement of the thyroid gland, if Dr. Sutton had operated, as he advocated, the chances are that the patient would not have survived the operation. Enlarged thymus gland is associated with the lymphatic constitution, and in these conditions, sudden death during operation is frequently observed. These patients stand operation poorly, and operation is to be scrupulously avoided. The necessity of vigilance in detecting these cases before, and not after operation, and the avoidance of operative procedures upon them can not be sufficiently emphasized.

The Society is looking forward to the next meeting with considerable pleasure in hearing L. C. Taylor of Springfield, Ill., who is to read a paper on "Myocarditis."

ST. CLAIR COUNTY.

The regular quarterly meeting of the St. Clair County Medical Society was held at Priester's Park on Thursday, Jan. 4, 1906, with Dr. W. E. Wiatt, president, in the chair, and C. W. Lillie, secretary *pro tempore*, and Members Rayhill, Sloey, Campbell, Rendleman, Auten, Irwin, West, Kercher, and Spannagel present; also visitors Dr. Carroll Smith and Dr. Walter Wilhelmj, of East St. Louis.

Called to order; reading of minutes dispensed with because of absence of recording secretary.

Dr. Auten presented some tonsils which he had removed by complete enucleation of the gland in its capsule without injury to the latter, and described the process. He recommends that the removal of the tonsils be done by that method, as it leaves no nucleus for subsequent growth and inflammation. The use of the tonsillitome is condemned; removal of a portion of the tonsil does not result in contraction of the remainder. Dr. Auten employs a 25 per cent. to a 33 per cent. solution of cocain as a local anesthetic, and has never had any bad results from the use of the strong solution; thinks an advantage is gained because of the rapidity with which anesthesia is secured. Dr. Auten thinks the best results from this tonsillectomy are found in children who have impaired hearing because of the enlarged tonsils; operation generally resulting in improvement of that faculty. The most dangerous tonsils are not the large ones, but those which are small or partially submerged.

Dr. Auten reported a case of mastoid disease which developed quite suddenly with severe symptoms which called for operative interference. On operation no pus was found in the mastoid cells, but on cutting away the thin plate of bone over the sigmoid sinus as much as half an ounce of pus was found; the sinus was filled with a plug of partly decomposed blood clot, of very offensive character; part of this was removed, and the cavity packed with sterile gauze; the temperature fell, but again rose; the cavity was opened, and the plug in the sinus broken up; hemorrhage followed, but this was controlled by pressure, and the cavity again packed; temperature again fell, and at the time of the report there is every prospect of recovery.

Dr. Rayhill reported a case of gunshot injury in a 10-year-old boy. The ball, a 22-caliber, entered the base of the skull about half an inch to the right of the right lateral sinus. When seen about an hour after the accident no signs of shock were present; the boy was conscious. He was sent to the hospital where no change was observed till five days later, when his temperature rose to 104 F., and slight convulsive movements were observed. The skull was then trephined and some small spicula of bone were removed. There was some inflammation at the wound of entrance, the meninges showing signs of infection. The ball was not sought. The condition did not improve, and the boy died from meningitis about thirty-six hours later.

The case of J. Harvey Moore, an itinerant who had been prosecuted by the prosecuting attorney for obtaining money from a blind man under false pretenses, was reported by Dr. Auten. The defendant, on his own admissions, convicted himself of fraud, but, as he refunded $100 of the $150 he had received, and signed an agreement to leave the state, the prosecution was dropped.

Dr. Walter Wilhelmj and Dr. Carroll Smith, of East St. Louis, were elected to membership.

Adjourned to meet the first Thursday in April.

VERMILION COUNTY.

The Vermilion County Medical Society met in Danville, Feb. 12, 1906. Minutes of January meeting read and approved. The name of J. H. McIntosh was presented, reported on favorably by censors, followed by his election. The essayists of the evening not being present Robert McCaughey of Hoopeston opened a discussion on hepatic insufficiency, by saying he thought the title badly chosen, as meaning very little, but he supposed the essayist would have in mind, were he present, inhibited secretion of bile. He went into a scientific discussion of the chemical functions of the liver, which was exceedingly profitable as well as interesting. The essayist who was to discuss autointoxication not being present, a discussion of the subject was taken up by A. M. Miller of Danville, who went into a lengthy exposition of the chemistry of autointoxication, with an application of the principles as worked out by some of our research men, as well as his own observations. J. G. Fisher of Catlin made a clever application of the principles of autointoxication, which added greatly to the interest.

Adjourned.

E. E. CLARK, *Secretary.*

WILL COUNTY.

The regular meeting of the Will County Medical Society was held in the Public Library, Tuesday evening, Feb. 6, 1906. The program was as follows: Paper, "Frenzied Therapeutics," Dr. Watson H. Curtis, of Wilmington. The speaker discussed the many drugs and other therapeutic measures advocated and used without reasons or results in pneumonia. The discussion was led by Dr. Dougall. Paper, "Proprietary Nostrums," Dr. Harry A. Patterson, Joliet, discussed by Drs. Jump, Dougall, Van Hoosen and Bowles. Paper, "Surgical Mortality," Dr. Bertha Van Hoosen, Chicago. The preparation for operation and the postoperative care were described in detail. The newer anesthetics were discussed and deductions from a large number of cases in which nitrous oxid or scopolamin-morphin was used show to the speaker the superiority of these anesthetics over the old anesthetics. Discussed by Drs. Dougall, Lennon and Nash.

Members present: Drs. Nash, Williamson, Dougall, Patterson, Lennon, Leach, Eldredge, Fisher, Munch, McGann, Curtis, Jump, McClannahan, Bowles. Visitors: Drs. Couley, Manhattan and Bertha Van Hoosen of Chicago. Adjourned.

MARION K. BOWLES, *Secretary.*

INFANTILE PEMPHIGUS.*

V. J. COHENOUR, M.D.

JOLIET, ILL.

Pemphigus is an acute or chronic bullous disease, characterized by the formation of numerous irregularly scattered, variously sized oval blebs, arising from apparently normal or moderately reddened skin; and which may be accompanied by mild or severe constitutional disturbance. Six varieties are mentioned by more recent dermatologists, viz: acute, chronic, foliaceus, vegetans, vulgaris, and neonatorum. Pemphigus neonatorum occurs in the new-born a few days after birth.

Etiology.—True pemphigus is not due to syphilis and is not hereditary. It is often thought to be caused by functional or organic derangement of the nervous system. Epidemics are reported of infection from the navel by careless midwives, also from infective lochia and wounds. Pemphigus has followed rheumatic fever and diphtheria. Unhygienic surroundings are also contributory. Staphylococcus aureus and albus, as well as a diplococcus are found in the serosanguinous contents of the bullæ.

Symptoms.—The eruption usually comes out suddenly with premonitory symptoms of malaise and of slight or severe febrile reaction. Other symptoms are chilliness, rigors, restlessness and other systemic disturbances. The lesions vary from the size of a pea to that of a hen's egg. They are generally quite abundant, and more or less irregularly distributed over the surface. The blebs distend and break easily, coming out in distinct crops from normal, or slightly reddened skin. Occasionally a narrow, reddened area surrounds the bullæ, the contents of which are at first clear, changing to a yellow, opaque, or hemorrhagic fluid.

1. *Benign Type.*—Drs. Krocker, Olshausen and other dermatologists have observed a mild form with sudden onset; in most of their cases of this variety the acute outbreaks become less active and gradually subside. The lesions were less numerous and the disease assumed a chronic form or the blebs disappeared by absorption, or by rupture, drying to yellowish brown crusts. Some of these cases were apparently contagious; numerous epidemics are reported in Germany and other parts of Europe. Hengge of Berlin reports four children infected by fetid lochia from one parturient. *The British Dermatological Journal* reports an epidemic with twelve cases, all infants. All were delivered by the same midwife. P. Manson noted some cases of a mild contagious character in the Tropics. Lesions are usually found about the lower part of the trunk, yet they may be of extensive and general distribution. Favorable termination is reached in a few weeks in a majority of cases of this type.

2. *Malignant Type.*—Tilbury Fox and others have reported cases of a severe and grave character, having fever and septic symptoms. The bullæ were abundant and widely distributed and continued to increase in severity. The mucous membrane of the throat, mouth and eyelids may be involved. The blebs become flaccid and puriform and a fatal termination usually occurs. C. Hochsinger of Leipsic states that, in his experience, when pemphigus develops on reddened skin surface, the case has proved malignant and will be fatal. His reported case died in eleven days. Lack of scab formation differentiates genuine pemphigus from impetigo.

Report of Case.—Katie T., aged 10 days, of Russian parentage. The mother was attended by a midwife during an apparently normal labor. She has a healthy 2-year-old child. Neither of them have had pemphigus. During the latter part of the first week the mother noticed a few blisters on the body and limbs of the infant, but paid little attention to the eruption. These lesions developed more rapidly and some systemic disturbances arose, so they became alarmed and consulted me. On examination I found its body covered with bullæ, which varied in size from a hazel nut to that of an egg, and with ruptured blebs, which were surrounded by yellowish crusts. The lesions were quite severe on the

* Read before the Will County Medical Society, Dec. 5, 1905.

extremities. Slight involvement of mucous membranes of the throat and mouth was noted, also slight fever (99.4 F.), and septic symptoms. Bulla of even margin, oval outline, and varied sized arose from slightly reddened skin. About three fifths of the entire skin surface was covered with this eruption. The navel was not healed and was surrounded by blebs, so I was unable to determine if infection occurred from this source. I believe there was some involvement of the nervous system. The surroundings were unhygienic. The infant gradually grew weaker from the sepsis and extensive involvement, and died after three days' illness.

Diagnosis.—a. In erythema multiforme, the blebs are a part of a general eruption with circinate configuration. The lesions are usually limited to the hands and forearms and bulla arises from inflamed skin. The course is rapid, generally two weeks.

b. Bullous syphiloderm has more involvement of the palms and soles. Puriform blebs form thick crusts and, as a rule, are followed by ulceration. The lesions are more often confined to the genital and anal regions with little disposition to spread. Ulcers occur on the mucous surfaces of the mouth and lips; coryza, with snuffles, is marked. There is less bleb formation with irregular patches and infiltrated border. The history and other symptoms of syphilis, history in one or both parents, may be elicited in bullous syphiloderm.

Prognosis.—The prognosis is good in the mild type, but guarded and grave in the malignant type.

Treatment.—1. Hygienic surroundings. 2. Plain substantial diet. 3. Medical treatment, arsenic in the form of Fowler's solution, gtt. 2-5 t. i. d., increased dose to point of tolerance. Strychnin and quinin are also recommended. 4. External applications, as ung. zinci oxidi and other soothing applications, are beneficial.

WESTERN ILLINOIS DISTRICT MEDICAL SOCIETY.

The annual meeting of the Western Illinois District Medical Society occurred at the Commercial Club, in Alton, on Friday, Oct. 27, 1905. There was a morning and afternoon session, both of which were largely attended by the physicians of the Sixth Councilor District. This district includes the counties of Adams, Brown, Pike, Scott, Cass, Morgan, Greene, Calhoun, Jersey, Macoupin and Madison. The officers re-elected for the coming year were: President, H. W. Chapman, M.D., Whitehall; first vice-president, L. J. Harver, M.D., Griggsville; second vice-president, David W. Reed, M.D., Jacksonville; secretary and treasurer, A. L. Adams, M.D., Jacksonville; Board of Censors, T. J. Pitner, M.D., Jacksonville; L. H. A. Nickerson, M.D., Quincy; Waldo Fisher, M.D., Alton.

The following program was given: "The Consideration of Serious Surgical Emergencies," J. A. Day, M.D., Jacksonville. In this paper particular stress was laid on the urgent necessity for efficacious and heroic treatment in desperate cases, caused by direct traumatism or other surgical diseases. Such cases do not usually bring credit to the surgeon, as success is not the rule, and he is likely to be censured. Energetic action was urged, nevertheless. The fact was pointed out that experience has taught that certain apparently hopeless cases do recover, where an operation is done *in extremis*. As with our present incomplete methods we are unable to determine just when the last vestige of vital energy is exhausted, and, therefore, can not gauge the tensile properties of life, we are culpable if we do not give the patient the benefit of the doubt and operate. The surgical conditions that were mentioned, where prompt and intelligent intervention is necessary to save life, are those resulting from accident in its broadest sense; not only those cases caused by mechanical violence, but also those caused by disease. Reference was made to the fact that it was not difficult to get the consent of the patient and his friends for an operation in cases of traumatism, on account of the self-evident demand for action, and the responsibility was, therefore, not so great, the contrary being the case in emergencies arising from surgical diseases other than

those caused from trauma. It was advised that the shock be treated before operating in such cases, unless hemorrhage demands it. The dangerous practice of moving or frightening the patient after serious injuries was condemned. Infection is not apt to follow gunshot wounds, on account of the sterilizing influence of the heat produced by the rapid transit of the ball through the atmosphere. The various accidents which frequently follow severe illnesses were spoken of and appropriate treatment suggested. Considerable time was devoted to the dangerous accidents that come about from disease, pure and simple, and attention was called to the fact that at such times the surgeon is greatly handicapped by the already weakened condition of the patient from the pre-existing disease. Especial reference was made to intestinal perforation during typhoid or appendicitis, etc., and a plea was made for timely operation, even if profound shock was present, where general anesthesia was contraindicated and local anesthesia or none at all is necessary. The paper concluded with remarks on the importance of keeping up the fight in desperate cases, even in the face of what appears to be certain death, hoping for occasional success.

A paper on "Cholethiasis" was read by H. R. Lemen of Alton, and one on "Pelvic Abscess," by Henry Hart, M.D., of Quincy.

In a paper on "Chronic Nephritis of the Aged" J. Palmer Mathews, M.D., Carlinville, stated that the treatment of impaired function and insufficiency of kidneys and liver is rest, and that the animal proteids should be excluded from the diet. The absorption of products of putrefaction from animal proteids in the alimentary canal is the cause of the degeneration of the arteries. By a process of yeast fermentation in milk sufficient proteid for the bodily needs is predigested. Lactic acid is a destroyer of germs and keeps down fermentation in the alimentary canal. When we recognize the full pulse of high blood pressure, the hypertrophied heart and uremic poisoning in patients of advanced age, we should warn them to stop their meat diet and seek for their proteids in the vegetable kingdom. In the examination of old soldiers who come before the pension board, there are frequently presented a group of symptoms, pathognomonic of a serious disease of degeneration. The hardened arteries, hypertrophied heart and insufficiency of the kidneys are signs of chronic interstitial nephritis, sufficient even without the presence of albumin in the urine. The etiology is the presence in the blood of an irritant poison which raises the blood pressure in the capillaries and throws extra work on the heart and kidneys.

The differential diagnosis between parenchymatous and interstitial nephritis becomes clear when the microscope shows a proliferation of epithelial cells, the uriniferous tubules being plugged with epithelial casts. The interstitial nephritis is caused by new connective tissue in the outer coat of the blood vessels, which contracts the malpighian tufts and blood vessels of the kidney, from which the solid constituents of the blood are filtered by osmosis. We, therefore, have copious flow of water with retention of the solids in the blood. The casts of parenchymatous nephritis are diagnostic of the chronic or acute stage. Epithelial casts are present in the acute stage from proliferation of the cells of the uriniferous tubes. The hyaline casts indicate a degeneration and follow a subsidence of the acute stage. The presence of albumin in the urine of interstitial nephritis indicates an inflammatory process in the walls of the arteries. When the albumin is diminished the process is in abeyance and the disease is chronic. Interstitial nephritis is a degeneration of the arteries of the aged. When the vessels become narrowed high blood pressure supervenes, which causes compensatory hypertrophy of the heart and watery urine. Congestion of different organs is frequent with consequent disturbance of function.

A paper on "Glaucoma" was read by T. L. Foulds, M.D., of Alton, and one on "Peritonitis" by J. W. Hairgrove, M.D., of Jacksonville. R. J. Christie, Jr., M.D., of Quincy, read a paper on "Tubercular Adenitis of the Neck."

R. J. Christie, Jr., M.D., of Quincy, Ill., introduced the following resolutions, which were adopted unanimously:

Resolved, That the Western Illinois District Society, assembled in annual

session at Alton, on October 27, 1905, does heartily indorse the measure entitled "A Bill to Increase the Efficiency of the Medical Department of the United States Army," to come before the committee on military affairs of the House of Representatives of the United States; and be it further

Resolved, That this society memorialize Congressman George W. Prince, of the Galesburg district and member for Illinois of the committee on military affairs, petitioning him in the interest of this bill; and be it further

Resolved, That we regard this proposed legislation as of tremendous importance, both to the army and to the medico-military division of the various states; and be it

Resolved, That in view of the humiliating inefficiency of the medical department of the army in the Cuban campaign against Spain, and other more recent experiences, we pray that he use his influence in support of this measure; and be it

Resolved, That we believe the proposed legislation is wise, just and eminently necessary.

The discussion of the above paper was general and interesting, and, after an all-day session, the meeting adjourned. The next session of this society will be held in Jacksonville Oct. 26, 1906. A. L. ADAMS, *Secretary*.

NEWS OF THE STATE

Dr. Kuehne, of Rockford, has moved to Cedarville.

Dr. Willoughby Walling, Chicago, is in New York.

Dr. F. O. Jackman, of Bloomington, is ill with septicemia.

Dr. Charles Adams has just returned from a tour through Mexico.

A virulent form of diphtheria is reported as prevalent in Woodford County.

The Tri-City Sanitarium, Moline, has elected Dr. S. P. S. Edwards as Secretary.

Scarlet fever is reported to have broken out in the public schools of Long Point.

Dr. E. C. Gaffney, of Springfield, has gone to Spanish Honduras on a business trip.

Dr. John L. Yolton of Bloomington has been elected county physician of McLean County.

Dr. William Hessert has been appointed surgeon to the Alexian Brothers Hospital, Chicago.

Dr. M. M. Brown of Golden, Adams County, has gone to India as a medical missionary.

Dr. Ira H. Gillum, of Millford has had a stroke of paralysis and is in a critical condition.

Dr. T. W. Dresser, of Springfield, has gone to Florida for the remainder of the winter.

Dr. Frank Billings is taking a short vacation in the form of a yachting trip in the Carribean Sea.

Dr. C. A. Allen, of Virden, has purchased a building lot and will erect a new office building.

A decree of the court has authorized Dr. S. Jakubowski, Chicago, to change his name to S. Jackson.

Dr. J. E. White of Champaign has been re-elected Grand Medical Director of the Court of Honor.

Dr. M. O. Greer, formerly of St. Louis, has located in Cairo, at Ninth Street and Commercial Avenue.

A case of smallpox was discovered at the Illinois State School for the Blind at Jacksonville on February 24.

Dr. R. S. Frisbie has resigned as Assistant Superintendent of the Lincoln Asylum for Feeble-Minded.

Dr. L. Tibbetts, of Rockford, has not removed to California, as was stated in the January issue of THE JOURNAL.

Chicago citizens living near 217 Leavitt Street are objecting to the establishment of a hospital at that number.

Measles are epidemic at Argosa. Three deaths have occurred and the schools may be closed on account of the disease.

Dr. Nicholas Senn will deliver the oration on "Surgery" at the International Medical Congress at Lisbon, in April.

Dr. Chas. Nelson Ballard announces the removal of his residence to 1396 Washington boulevard, corner of Kedzie avenue, Chicago.

The Brokaw Hospital of Bloomington has had a most successful year, the increase in the number of patients treated being about 40 per cent.

Dr. E. A. Kratz, member of the County Board of Supervisors for Champaign Township, has announced himself as candidate for re-election.

Dr. J. L. Allaben, of Rockford, was attacked on February 14 by William Gleason, whose horse became frightened at Dr. Allaben's automobile.

Drs. J. H. Davis and J. B. Denby, Carlinville, have purchased property on East Main street, which they will convert into offices and a hospital.

J. Ogden Armour has given $25,000 toward the $140,000 required for the purchase of the lot for the new George Smith addition to St. Luke's Hospital.

Dr. Albert Schmidt, of Quincy, has disappeared, taking with him his medical diploma and $1,000 in cash, said to have been obtained on a check signed by his father.

A new car line has been completed from Anna to the Southern Illinois Hospital for the Insane. Arrangements have been made for running a hospital car upon this line.

The case of Dr. A. L. Blunt, 356 State Street, charged with performing a criminal operation on Miss Martha Marquardt, has been dismissed for want of prosecution.

The *Weekly Bulletin* of the Chicago Board of Health states that the present birth rate in Chicago is 13.11 per thousand population, or 4 per cent. less than the death rate.

Dr. Benson A. Cohoe, of the Medical Faculty of the University of Chicago, has resigned to accept a position as resident physician at the Johns Hopkins Hospital, Baltimore.

Dr. and Mrs. Fenton B. Turck, 151 Rush Street, Chicago, will leave on April 1 for Portugal, to attend the International Medical Congress. They expect to be gone about two months.

Dr. Theodore B. Sachs lectured on February 27 before the Michael Reese Alumnæ Nurses. His subject was "The Tubercle Bacillus and Its Cycle of Existence Within the Human Organism."

Dr. Palmer Findley, Chicago, has been elected Professor of Gynecology in the College of Medicine, University of Nebraska, Omaha. Dr. Findley expects to remove to Omaha in the spring.

Dr. Howard Crutcher, of Chicago, chief surgeon of the Chicago and Alton Railroad, has resigned and moved to Denver, Colo. The change was necessary on account of the condition of his health.

Dr. Homer O. Bates, formerly of Chicago, has located at Long Beach, Cal. He has been elected president of the local medical society and one of the committee to build a $60,000 hospital, which is being erected.

Dr. Hiram L. Cosby, Lincoln, has been awarded a verdict for $350 against Sheriff James White, of Logan County, for professional services rendered in attending a man accidentally shot by the sheriff last year.

The first anniversary of Columbus Hospital, Lake View Avenue and Deming Place, Chicago, was celebrated by high mass on February 26. The hospital is conducted by the Missionary Sisters of the Sacred Heart.

Dr. Rachelle S. Yarros lectured on the "Hygiene of Women" on February 24, at the Chicago Public Library. The lecture was one of the popular lectures given under the auspices of the Chicago Medical Society.

Dr. R. S. Frisbie has resigned as assistant superintendent of the Asylum for Feeble-minded Children at Lincoln. It is reported that the Logan County grand jury has refused to take any action on the charges brought against him.

The Chicago Eye, Ear, Nose and Throat College is planning to erect a new building at a cost of $75,000. This has become necessary owing to the growth of the institution. At the annual meeting the board of directors was re-elected.

The middle section of the American Laryngological, Rhinological and Otological Society held the most successful meeting in its existence at Chicago on February 26. A large number of specialists from the Middle West were in attendance.

In the damage suit for $50,000 against Dr. George W. Webster, President of the Illinois State Board of Health, brought by Augusta Luckchun, the jury returned a verdict for the plaintiff in the sum of $3,000. Dr. Webster has appealed the case.

The Iroquois Memorial Association has abandoned its plans for building a memorial hospital in commemoration of the victims of the Iroquois Theater fire. Lack of interest and financial support of the project is responsible for this decision.

Chief Collins, of the Chicago police force, has detailed two detectives to ride on the Northwestern Elevated Railroad and arrest all persons violating the anti-spitting ordinance. The rule will not be enforced in smoking cars, but only in cars used by women.

Dr. Thomas A. Woodruff lectured on "The Care of the Eyes and the Eyesight," at the Public Library Building, Chicago, on February 24. The lecture was one of a series being given under the auspices of the Chicago Medical Society, for the education and instruction of the laity.

The State Civil Service Board held examinations for attendants in the insane asylums at Anna, Watertown and Elgin, March 6; Peoria,

Kankakee and Centralia, March 7; Jacksonville, Benton and Tuscola, March 8; and Effingham, Fairfield and East St. Louis, March 9 and 10.

An examination for internes in the Cook County Hospital and the county institutions at Dunning, was held on Tuesday, Wednesday and Thursday, March 6-8, by the examining board. This is the first examination held under the new regulations. Over one hundred took the examination.

Dr. John Haywood, of Chicago, who was arrested on complaint of J. Hottinger, a druggist at 224 Lincoln Avenue, for attempting to break open a Salvation Army poor box in order to obtain money to buy cocain, was fined $50 and sent to the Bridewell, at his own request, by Justice Mahoney.

Judge McEwen has decided against the Chicago Medical Society in its attempt to keep the bowlder in Grant Park as a monument to the memory of Dr. Guthrie. Judge McEwen dissolved the writ of injunction obtained by the society, stating that the proper form of relief was through a writ of mandamus.

In the suit of W. P. Eich, of Emington, for alleged malpractice against Drs. C. P. Wycoff, of Emington, and W. G. Ross, of Kempton, the plaintiff completely failed to make a case and the jury returned a verdict in favor of the physicians, without any testimony for the defense having been given. The costs were assessed against Eich.

The City Council of Joliet has voted in favor of a new pest house for the joint use of the city and township of Joliet. An appropriation of $7,000 has been made for the new building. Much credit is due Dr. W. A. Roberts, the local health commissioner, who has labored long and earnestly for a new isolation hospital.

Ludvig Hektoen, M.D., Professor of Pathology of Rush Medical College, delivered an address on "Immunity in Theory, Experiment and Practice" before the Wayne County, Michigan, Medical Society, January 15. Professor Hektoen's address appears in the March number of the *Journal of the Michigan State Medical Society.*

The building committee of the Cook County Board has decided to accept the plans of President Brundage, providing for a Consumptives Emergency Hospital on the grounds of the County Hospital. The building will be two stories high and will cost $15,000. It is intended for the reception and treatment of consumptive patients whose condition will not warrant their transportation to Dunning.

St. Luke's Hospital, Chicago, has purchased the lot with a 70-foot frontage on Michigan Avenue, at a cost of $140,000, and will erect a new building as a memorial to George Smith, a former banker of Chicago. A gift of $500,000 for this purpose was recently received from James Henry Smith, of New York, heir to an estate of $50,000,000 left by George Smith.

Mortality reports for Chicago for February show the lowest death rate for this month in the last 63 years. A rate of 10.7 per thousand

of population is nearly 2 per cent. lower than the previous lowest record, which was 14.33 in February, 1901, and over 15 per cent. lower than the average February death rate for the last decade, which was 16.59. The percentage of possible sunshine during the month was 57, the normal average for February being 52 per cent.

Chief Sanitary Inspector Hedrick, of the Chicago Health Department, has recommended the discharge of all women employed as sanitary inspectors, with but one exception. Mr. Hedrick claims that more efficient service can be rendered by male inspectors. At a mass meeting of the Woman's Club, held at the Armitage Avenue Settlement House, resolutions were adopted protesting against the carrying out of Mr. Hedrick's recommendation.

Commissioner of Health Dr. Charles J. Whalen, in the *Bulletin* for March 3, reports one case of smallpox sent to the Isolation Hospital on February 26. This is the third case of smallpox found in Chicago since January 1. The patient was an unvaccinated colored porter, who was exposed to the disease at a small station on the Chicago and Northwestern Railroad near Lincoln, Neb. This is the only case at present in the Isolation Hospital, which one year ago had 83 smallpox patients.

The new hall and the tubercular cottages at Watertown Hospital were dedicated on Lincoln's birthday. The hall has cost about $20,000, half of the work having been done by the patients. The cottages have been built from the surplus remaining from the appropriation made by the state, all the labor on them being done by the patients. Dr. W. E. Taylor, the superintendent, delivered the dedicatory address. The hall is equipped with bowling alleys, billiard tables, dancing floors and a stage with scenery.

Mrs. Wilhelmina Benn, of Maywood, and Mrs. Hagenow, of 480 North Clark Street, have been held to the grand jury by the coroner's jury as the result of inquests following the deaths of Miss Otilla Winkler and Miss Lola Maddison. Captain Healy, of the Chicago police force, states that Mrs. Hagenow has been arrested several times before for the same offense; that she was convicted on April 30, 1900, and paroled Dec. 20, 1902. Statements were obtained from the patients in each case, implicating the women named.

The De Witt County Medical Society is making plans for the dedication of the Dr. John Warner Hospital at Clinton in the latter part of March or the first week in April. At the same time, the De Witt County Society will celebrate its fiftieth anniversary. Clinics will be held by a number of prominent surgeons. The dedication address will be delivered by a speaker of national reputation. Hon. Vespasian Warner, Commissioner of Pensions, and son of Dr. John Warner, in memory of whom the hospital is erected, has promised to be present.

Mrs. E. R. Liens, of Decatur, who has been frequently prosecuted for violation of the Illinois Medical Practice Act, has been compelled by the attorney for the state board of health to sign a written agreement to discontinue practice and to settle for all her violations of the law, includ-

ing the payment of all costs of the prosecution. The woman conducted a bath and massage institution in Decatur and also made and sold the "Lien Diphtheria Cure," treating and caring for cases of diphtheria. The State Board of Health began prosecution in the Justice Court, where the suit was decided in favor of the defendant. The board appealed the case, which was heard in the January term of the Macon County Circuit Court.

New corporations licensed by the secretary of state at Springfield are as follows: Charles H. Nichols & Co., Chicago; capital, $5,000; manufacturing medicines; incorporators, Charles H. Nichols, W. H. Patton and W. H. Johnson. St. John's Medical University, Chicago; capital, $25,000; educational; incorporators, Jerome C. M. Chaffee, Joseph W. Sharts and Hugo H. Duerselen. Steloid Company, Chicago; capital, $25,000; chemicals, sanitarium, surgical sundries; incorporators, Daniel D. Hunt, Edw. D. Wahl and Charles H. Bowles. J. C. Ronshausen Company, Chicago; capital, $5,200; picture frames, moldings; incorporators, George E. Ruther, Hamilton Moses and F. J. Noonan. Chicago Medical Society, Chicago; number of directors decreased from eleven to five.

Dr. R. C. J. Meyer, Commissioner of Health of Moline, has devised a system of mailing cards for the use of the members of the local profession in reporting contagious diseases. The first card is mailed to the physician in charge of the case, who fills it out and returns it to the office of the Commissioner, stating the name and address of the patient, and the nature of the disease. The second card is sent by the Commissioner to the public school attended by the children in the family, and to the Public Library, the object being to prevent the spread of contagion. The last card is a termination notice, sent to the school, Public Library and other public institutions, notifying the authorities that the infected premises have been thoroughly disinfected and that there is no further danger of the disease being communicated.

George B. McClellan, of Peoria, known as "Diamond Dick, the original Indian Doctor," was fined $100 and costs for practicing medicine without a license and was forced to give to the constable a bill of sale on his trunks and personal effects, in order to satisfy the judgment. The prosecution was conducted by Emory Lancaster, a local attorney, acting for the Illinois State Board of Health. This man is an old offender against the Medical Practice Act, and has hitherto escaped punishment. Authorizations for his prosecution were issued in McHenry, McLean and Marshall counties and suits instituted, but he escaped in each instance before service could be had upon him. During February he was found violating the law in Adams County, near Quincy. Prosecution and conviction followed at Golden. This is the third time that he has been fined for violation of the Medical Practice Act, previous instances occurring at Peoria in 1901, and at Marengo in 1903, where he worked out a part of his fine in jail.

NEW MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY.

During the month of February, 1906, the following physicians have become members of their county society and of the Illinois State Medical Society:

CHAMPAIGN COUNTY.

J. H. Finch, Champaign.
W. L. Gray, Champaign.
W. F. Burris, Urbana.
W. M. Dillon, Urbana.
A. L. Collins, Mahomet.
N. R. Collins, Mahomet,
Lucy Exton, Thomasboro.
A. J. Foelsch, Bondville.
Ava Michener, Homer.

COOK COUNTY.

Manuel Alvarez.
J. B. Armstrong.
A. H. Benson.
C. Bertschinger.
D. Birkhoff.
Gustavus M. Blech.
Rexwald Brown.
Oscar Cleff.
P. C. Clemensen, South Chicago.
E. V. Cory.
J. C. Crist.
W. J. M. Cunningham.
Frank S. Davidson.
J. B. Diamond.
George C. Dittmann.
F. E. Dostal.
I. H. Eddy.
William B. Fehring.
James L. Fleming.
E. B. Greene.
C. G. Grulee.
C. Gunderson.
James W. Hall.
O. C. Hargreaves.
Samuel G. Higgins.
Frank E. Hoffmann.
Ed M. Holmes.
Merritt O. Hoover.
Niels J. B. Johnsen.
A. F. Kramps.
T. D. Laftry.
W. H. Lamborn.
H. W. Lang.
H. H. Latimer.
J. A. Lenz.
F. D. Marshall.
George L. McLaughlin.
John Meany.
E. B. Meisirow.
A. W. Mercer.
Daniel G. Moore.
H. R. Miller.
Charles T. Murphy.
George F. Pierce.
Thomas H. Renn.
Max J. Salamson.
Charles P. Schell.
J. Lawrence Smith.
J. A. Stevenson.
Rufus B. Stolp, Kenilworth.
Frank W. Van Kirk.
W. S. Wallace.
Charles W. Winne.

DECATUR COUNTY.

D. E. Yantes, Foosland.
J. H. Spyker, Decatur.
N. L. Bourne, Decatur.
L. P. Walbridge, Decatur.
J. T. McDavitt, Decatur.
S. L. Thorpe, Decatur.
R. D. Backley, Cerro Gordo.
C. H. McDonald, Decatur.

DOUGLAS COUNTY.

Iles McNeil, Newman.

EDGAR COUNTY.

N. A. Murphy, Paris.

EFFINGHAM COUNTY.

C. M. Wright, Altamont.
G. M. Baker, Altamont.

KANE COUNTY.

H. L. Pratt, Elgin.
E. A. McCormack, Elgin.
F. J. Coughlin, Aurora.
Charles F. Read, Geneva.
C. B. Johnson, Batavia.
E. F. Cleveland, Dundee.

MACOUPIN COUNTY.

H. A. Pattison, Benld.

MOULTRIE COUNTY.

W. E. Stedman, Sullivan.
A. D. Miller, Sullivan.
W. P. Davidson, Sullivan.
S. W. Johnson, Sullivan.
F. P. Zerfass, Sullivan.
J. D. Hardinger, Gays.
D. D. Grier, Gays.
J. H. Vadakin, Bethany.
W. H. Davis, Bethany.

PEORIA COUNTY.

E. M. Eckhart, Peoria.
S. Bane, Peoria.
L. Rutherford, Peoria.
C. H. Stocking, Peoria.
J. E. Heald, Peoria.
G. H. Weber, Peoria.
J. H. Bacon, Peoria.
I. C. Stevens, Peoria.
C. B. Welton, Peoria.

RANDOLPH COUNTY.

W. A. James, Chester.
W. R. McKenzie, Chester.
H. C. Adderly, Chester.
L. J. Smith, Chester.
A. D. Steele, Chester.
J. W. Weir, Sparta.
H. T. McKee, Sparta.
E. L. Hill, Percy.
Walter E. Sanger, Menard.
C. G. Smith, Redbud.
H. L. Saulnier, Redbud.
H. C. Dinges, Redbud.
J. G. Beattie, Preston.
Thos. Robertson, Steeleville.
J. P. Gillen, Prairie du Rocher.
W. C. Isom, Rockwood.
J. T. Reiss, Baldwin.

ST. CLAIR COUNTY.

George Loelkles, Belleville.

VERMILION COUNTY.

C. E. Brown, Rossville.
T. C. McCaughey, Hoopeston.
Isaac Mayhue, East Lynn.
J. H. McIntosh, Danville.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of February, 1906, the following members of the Illinois State Medical Society became members of the American Medical Association:

Bryant, J. H., Galesburg.
Brill, J. A., Chicago.
Buchanan, W. A., Paris.
Bradley, R. H., Marshall.
Becker, H. F., Danville.
Coggshall, T. C., Henry.
Cruse, C. V., Iola.
Culbertson, S. D., Piper City.
Dowdall, W. T., Jr., Peoria.
Dwight, F. A., Chicago.
Eddy, I. H., Chicago.
Epperson, J. C., Kansas.
Friedman, J. C., Chicago.
Granay, T. L., Irvington.
Gaffner, Theophilus, Trenton.
Heflin, H. N., Kewanee.
Holleman, P. W., Chicago.
Hummell, R. O., Joliet.
Hayman, L. B., Chicago.
Kaiser, J. M., Somonauk.
Kimball, Z. V., Hillsboro.
Lehman, S. W., Dixon.
Lang, H. W., Chicago.
Law, E. F., Weston.
Lyons, Jennie, Champaign.
Lowery, J. E., Homer.
Lamborn, W. H., Chicago.
Melaik, H. B., Kewanee.
McCaughey, R. S., Hoopeston.
McGonagle, T. C., Chicago.
Ochsner, E. H., Chicago.
Pietrzykowski, A., Chicago.
Pearce, Edward, Marshall.
Powell, G. P., Dixon.
Renn, T. H., Chicago.
Roane, J. Q., Boulder.
Spangenberg, W. C., Chicago.
Ulrich, J. H., Peoria.
White, J. V., Auburn.
Woltman, H. C., Jacksonville.
Waterous, H.W., Galvin.
Werth, S. S., Oak Park.

MARRIAGES.

ALBERT W. SLAUGHTER, M.D., Paris, Ill., to Miss Mary Golden, of Urbana, February 10.

WLADISLAW A. KUFLEWSKI, M.D., Chicago, to Miss Angeline R. Cwiklinski, of Buffalo, N. Y., February 21.

HARRY J. BRUGGE, M.D., to Miss Mary Elizabeth Morrison, both of Chicago, February 7.

DEATHS.

DR. SAMUEL C. LATHAM, College of Physicians and Surgeons, Keokuk, Iowa, 1870, died January 28, at Enfield, Ill., aged 72.

DR. THOMAS KELLY, a former resident of Clinton, died recently at San Jose, Cal. Dr. Kelly was for many years a prominent figure in the professional and political life of De Witt County, being County Treasurer for several terms.

DR. THOMAS B. HUNT, a graduate of the University of Louisville Medical Department, 1864, died at his home in Warsaw, from rheumatic endocarditis, aged 75. Dr. Hunt was assistant surgeon in the Fifty-fourth Kentucky Mounted Volunteer Infantry during the Civil War.

Dr. L. P. Rodgers of Beatrice, Neb., formerly a prominent practitioner of Sangamon County at Buffalo, was killed accidentally at Godfrey, Sunday, February 25. About five years ago Dr. Rodgers gave up the practice of medicine and became real-estate agent for Lord Scully in Nebraska.

Dr. A. L. Darling of Kilbourne was found dead in a hotel in Pekin recently. He was 55 years of age and had practiced medicine in Havana, Easton, Topeka, Manitou, Bloomington and Pekin before going to Kilbourne. Dr. Darling at one time was prosperous, but owing to unfortunate habits had lost his wealth and died as a result of his misfortune.

DR. JOHN C. SPRAY, Chicago Medical College, 1873, died at the People's Hospital, Chicago, February 20, from pneumonia, aged 60. Dr. Spray was medical superintendent of the Cook County Hospital for the Insane from 1878 to 1889. He was an alienist of wide reputation, and was one of the first physicians to advocate the employment of suitable amusements in the treatment of the insane.

DR. F. E. NORTH, Secretary of the Christian County Medical Society, died at the Baptist Hospital, St. Louis, Mo., following an operation for appendicitis. Dr. North graduated at the College of Physicians and Surgeons, Chicago, in 1900, and immediately located at Taylorville, where he built up a large practice. He early identified himself with the Christian County Medical Society, of which he was secretary for the past two years. His death is a great loss to professional circles in Christian County.

Sumner Clark, M.D., St. Louis Medical College, 1871, a member of the Illinois State Medical Society for a number of years, a member of the Æsculapian Society of the Wabash Valley, and at the time of his death the honored president of the Effingham County Medical Society, died at his home in the city of Effingham, Ill., after a short illness, March 5, 1906, aged 74. He practiced his profession for more than forty-nine years. He was one of the oldest and most prominent physicians in Effingham County. His funeral was conducted by the Masonic Lodge of Effingham.